A Guide to Building CSS Knowledge and Skills for Successful Project Delivery

Federal Highway Administration

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About This Guide

Context Sensitive Solutions (CSS) is a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions (FHWA-AASHTO Strategic Plan, March 2007). The purpose of A Guide to Building CSS Knowledge and Skills for Successful Project Delivery ("the Training Guide") is to provide background and resources to staff of state departments of transportation (DOTs) assigned the role of developing or improving a CSS training program. This section gives a brief overview of the content and organization of the Training Guide.

The Training Guide was designed primarily as a web-based document to make it easy for readers to jump directly to the sections of interest for their particular situation, print selected relevant sections, and gain access to training resources. For this reason, it will not be formally distributed in print. In addition, the web-based format allows access to hundreds of pages of materials and resources provided by state DOTs that were not previously posted on the Internet, and would be too extensive to provide in a print format, and allows for easier updating of and additions to these materials. For those desiring a hard copy, links at the top right of the page and on the site map provide printable PDF files for specific sections and the entire document if desired. The printable PDF files include graphics, text and existing course tables, but none of the course materials provided by the state DOTs.

For general navigation, on each page there is a main chapter menu on the left that links to each section; links to print sections, quick links to the tables of existing CSS training courses, additional resources, and contact information on the right. A site map (link at the bottom of the left menu) provides a table of contents for all chapters and sections as well as printable versions of each. Readers can click graphics for a larger view (will open in a new window/tab). All external links will open in a new window or tab.

The Training Guide includes:

- General guidance on how to structure and evaluate a CSS training program
- Content addressing all phases of project delivery including:
    - long range planning
    - environmental review
    - design
    - construction
    - operations and maintenance
- Descriptions of three types of CSS training classes:
    - awareness
    - basic
    - specialized

Examples and resources from existing CSS training programs that state DOT staff may wish to use in customizing their own CSS training program to meet their unique needs.

Printable and clickable PDF documents are provided detailing information about existing courses, such as major topics covered, offering agency, intended audience, cost, etc.

Links to course websites or materials from the class (e.g., abstract, outline, slides, etc.) are included where available.

The Training Guide does not intend to provide state DOTs with a pre-determined curriculum or materials for CSS training classes, but rather to provide examples that can be adapted to best suit the needs of individual states. After using the Training Guide, the reader will have a better understanding of:

1. How other state DOTs have approached the challenge of CSS training

2. What CSS knowledge and skills are necessary for staff at different levels and different functional areas

3. What relevant courses exist for awareness, basic and specialized CSS knowledge and skill building

4. What elements are part of an educational support network

5. How to go about evaluating whether a training program is effective in improving staff's CSS knowledge and skills

For example, a state with no existing CSS training program may wish to spend time reviewing the descriptions of the CSS knowledge and skills needed by personnel of different levels in the state DOT, then use the "How Do I Translate Educational Needs into a CSS Training Program?" chapter and examples of existing CSS awareness and basic courses to inform a team discussion of how to best approach the development of their own course(s). Another DOT with an existing program may wish to jump to the section on Specialized Skills courses to get information on advanced courses available to expand upon their staff's existing skills, and then investigate the chapter on training program evaluation to improve the performance measurement of their program.

The Training Guide is organized around questions that a state DOT staff person may have in developing their program, as follows:

1. Introduction

1.1 What is the purpose of the Training Guide?

Context Sensitive Solutions (CSS) is defined as a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions (FHWA-AASHTO Strategic Plan, March 2007). Although CSS does not represent a new concept for most transportation professionals, many state Departments of Transportation (DOTs) have not applied the principles of CSS systematically throughout all functional areas of decision-making, from long-range planning through construction and maintenance.

The Federal Highway Administration (FHWA) is a key partner in assisting state transportation agencies in achieving the goal of integrating CSS into all aspects of transportation decision-making for the purpose of expediting project delivery. FHWA has a unique relationship with state DOTs that requires a partnered approach to project delivery, and FHWA is committed to providing tools to state DOTs to assist with promoting efficient and effective project delivery. As such, FHWA directed that the Training Guide be developed in the spirit of partnership, offering a flexible menu of choices for a state DOT desiring to provide CSS educational opportunities. The Training Guide is a compendium of resources from diverse sources, organized to allow each state DOT to adapt their own CSS educational program to meet their unique needs. Many of these resources can also be utilized "as is" for state DOTs not wishing to develop individualized programs. The Training Guide is meant to act as a clearinghouse for CSS training resources; a "one-stop shop" for DOTs interested in finding CSS-related educational materials and opportunities.

The Guide to Building CSS Knowledge and Skills for Successful Project Delivery ("the Training Guide") is intended for:

- DOT staff who are leading the effort to develop a CSS training program
- Managers and supervisors in all phases of project delivery (long-range planning, environmental services, location and design, construction, operations and maintenance) as part of understanding how CSS educational needs relate to their functional area and discipline
- Any transportation agency desiring to develop a CSS training program
- Stakeholders including local governments, environmental agencies, special interest groups, advocacy organizations, etc

The content of the Training Guide was derived from an extensive interview process that helped describe the priorities and needs of state DOTs around the country desiring to educate staff on CSS principles, qualities and outcomes. Although other methods (outside of classroom environments) for building knowledge and skills are very important, the vast majority of those

interviewed believed that training in a classroom or interactive workshop format was the most effective educational strategy for promoting an understanding of CSS. Chapter 7 Educational Support Network provides brief information and resources for complementary educational (professional capacity building) methods and techniques that can be utilized by transportation agencies as part of a CSS educational framework.

The objectives of the Training Guide are to:

- Describe what a training program needs to focus on to change behaviors (knowledge, skills and motivation).
- Identify what executives, managers and supervisors/staff need to know and do in order to implement CSS.
- Identify learning goals for a CSS training program.
- Describe what a training program needs to encompass to build both knowledge and skills.
- Identify who needs to be trained within an organization and what level of training is appropriate.
- Describe how to translate training needs into a CSS training program.
- Define awareness level CSS training and provide examples of awareness CSS training materials.
- Define basic level CSS training and provide examples of basic CSS training materials.
- Define specialized skills training including an extensive list of available specialized classes and materials sorted by functional area of expertise and by topical area.
- Discuss what is involved in an educational support network. (i.e. peer exchanges, manuals and guidance, mentoring, technical assistance, seminars, informal group discussions, and informational clearinghouses).
- Identify evaluation/assessment practices for a CSS training program.

1.2 How is a CSS training program linked to organization-wide CSS implementation?

The Training Guide is meant to function as a companion to the CSS Integration Guide (see box below). The Integration Guide recommends a framework for implementing CSS throughout all functions of a transportation agency. The framework describes a CSS implementation planning process that includes training, agency-wide procedures, vision, accountability, resources, and communication. The Integration Guide will help DOTs understand the importance of conducting CSS training and how to fit it together with other aspects of implementation to form a cohesive strategy. The Integration Guide also provides an analysis tool to identify integration gaps and begin the process of translating these gaps into CSS educational gaps or professional capacity building needs. The Training Guide is available to help DOTs with the specifics of how to develop training classes once organizational and project-level knowledge and skill gaps have been identified.

> **CSS Integration Guide**
>
> The Integration Guide is a companion project, also commissioned by FHWA, whose product is forthcoming. The Integration Guide offers technical guidance to State Departments of Transportation (DOTs) senior leaders and practitioners

seeking to comprehensively integrate CSS principles in planning and project development. The Integration Guide is intended to provide information to executives interested in CSS implementation organization-wide as well as practice-level integration. Technical guidance will be supported by an Implementation Framework to assist in addressing organizational change efforts needed to integrate CSS principles into transportation operations. The Guide also includes instruction for the application of an organizational gap analysis that can be tailored to the user's specific organization.

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Why conduct CSS training as part of a larger CSS implementation effort?

A CSS training program is aimed towards building the knowledge and skills (professional capacity) of executives, managers, supervisors and staff to effectively and efficiently carry out their responsibilities in a way that reflects CSS definition, principles, qualities and outcomes (FHWA-AASHTO Strategic Plan, March 2007). Those principles, qualities and outcomes are listed below.

CSS Definition:

Context Sensitive Solutions (CSS) is defined as a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions.

CSS Principles: These core CSS principles apply to transportation processes, outcomes, and decision making.

- Strive towards a shared stakeholder vision to provide a basis for decisions.
- Demonstrate a comprehensive understanding of contexts.
- Foster continuing communication and collaboration to achieve consensus.
- Exercise flexibility and creativity to shape effective transportation solutions, while preserving and enhancing community and natural environments.

CSS Qualities: Context sensitive solutions is guided by a process which...

- Establishes an interdisciplinary team early, including a full range of stakeholders, with skills based on the needs of the transportation activity.
- Seeks to understand the landscape, the community, valued resources, and the role of all appropriate modes of transportation in each unique context before developing engineering solutions.

- Communicates early and continuously with all stakeholders in an open, honest, and respectful manner, and tailors public involvement to the context and phase.
- Utilizes a clearly defined decision-making process.
- Tracks and honors commitments through the life cycle of projects.
- Involves a full range of stakeholders (including transportation officials) in all phases of a transportation program.
- Clearly defines the purpose and seeks consensus on the shared stakeholder vision and scope of projects and activities, while incorporating transportation, community, and environmental elements.
- Secures commitments to the process from local leaders.
- Tailors the transportation development process to the circumstances and uses a process that examines multiple alternatives, including all appropriate modes of transportation, and results in consensus.
- Encourages agency and stakeholder participants to jointly monitor how well the agreed-upon process is working, to improve it as needed, and when completed, to identify any lessons learned.
- Encourages mutually supportive and coordinated multimodal transportation and land-use decisions.
- Draws upon a full range of communication and visualization tools to better inform stakeholders, encourage dialogue, and increase credibility of the process.

CSS Outcomes: Context sensitive solutions leads to outcomes that...

- Are in harmony with the community and preserve the environmental, scenic, aesthetic, historic, and natural resource values of the area.
- Are safe for all users.
- Solve problems that are agreed upon by a full range of stakeholders
- Meet or exceed the expectations of both designers and stakeholders, thereby adding lasting value to the community, the environment, and the transportation system.
- Demonstrate effective and efficient use of resources (people, time, budget,) among all parties

The specific benefits of including CSS training as part of a larger CSS implementation effort include:

- Training can address the perceived educational needs of staff (explained further in Chapter 2 Building Knowledge and Skills through Training Initiatives)
    - The specific knowledge and skills that the training classes address can and should be linked to the overall goals of the CSS program. For example, an overall CSS program goal may be to increase external stakeholders' understanding and involvement with transportation projects at an early stage of development. The corresponding CSS educational need would be to provide knowledge in the form of a toolbox of public involvement options, the understanding of when each method is appropriate (e.g., public meetings, interviews, focus groups), and the skill to tailor them to achieve desired objectives

- Training can be used to communicate the commitment of a DOT's executive leadership to the principles of CSS and the goals of the overall CSS implementation effort
- Feedback from training class participants can be used to identify areas where additional implementation effort is necessary (e.g., clearer commitment from executives, or a revised design manual)
- Feedback from training classes can identify unmet educational needs that should be addressed by further classes
- Training can arm staff with the proper knowledge and skills to carry out their day to day activities in a more effective and efficient manner

Additional, more specific benefits from different types of CSS training classes are discussed in sections 4.2, 5.2, and 6.2.

To optimize the feedback received from training classes, the evaluation/assessment of the training should be considered before the class is conducted (covered in Chapter 8 How Can the Effectiveness of a Training Program be Evaluated?). A thorough evaluation of training can provide the type of feedback needed to inform other aspects of CSS implementation as well as the improvement of the training classes themselves.

1.3 What type of information was used to inform the development of the Training Guide?

A CSS approach requires that one fully understand the context by communicating and collaborating with stakeholders to ensure a proper solution/product. The development of the Training Guide started by utilizing the principles of understanding stakeholder interests and needs to inform the content of the Training Guide. The research team interviewed a total of 34 telephone interviews with 65 individuals during March, April and May 2007 with representatives of:

- 9 state DOTs. Due to restrictions imposed by the U.S. Office of Management and Budget, the research team was only allowed to directly interview nine state DOTs; however, many additional state DOT staff volunteered their time as part of the FHWA Division office interviews.
- 13 FHWA division offices
- 5 FHWA Headquarters or Resource Center Teams
- 7 consultants

Interviewees were either directly identified by FHWA or responded to a solicitation sent to the CSS contact person for each state DOT and FHWA division office. The states asked to participate in interviews were selected to have a range of experience with CSS, from states with robust training programs to those with very little exposure to CSS training. Following the scheduling of a telephone interview time, interviewees were sent the list of interview questions, covering: current CSS-related policies and organizational integration, existing CSS training classes, perceived CSS knowledge and skills needed by staff, additional professional capacity building techniques, and perceived challenges to CSS implementation. Interviews typically lasted about two hours. Following the interview, a summary was sent to the interviewee for

review and comment, and materials related to the state's existing CSS training classes were requested. The materials collected for CSS training courses are included in Chapters 4, 5 and 6 and comments made by the interviewees appear in aggregated form throughout the document. Interviewees were assured that their comments would not be publicly distributed, therefore the interview summaries themselves are not available.

1.4 What have we learned about training from state DOT experiences?

Many state DOTs have utilized training classes to advance CSS integration and implementation. According to a 2006 report to the AASHTO Task Force on CSS, 47 states have held seminars, workshops and/or provided CSS training to staff. Thirty-five states have issued formal policies related to CSS, and 19 states have developed CSS-related manuals or website content. Even though these figures represent tremendous progress in terms of CSS-related activities, numerous barriers to full CSS implementation continue to exist (i.e., resistance to change, lack of a clear definition of CSS among DOT leadership, staff and the public, and misconception about CSS costing more in time and money or compromising safety). When state DOTs were asked about ways to improve their CSS implementation efforts in the AASHTO survey, responses indicated a strong desire for training opportunities such as workshops and peer exchanges. The topics of most interest to state DOTs participating in the AASHTO survey included:

- Successful training tools/guidelines, including design flexibility and maintenance issues
- Effective public involvement processes
- Performance measures
- How to deal with the perception of higher costs
- How other states deal with liability concerns

These topics of interest were validated by the 34 interviews conducted as part of the development of the Training Guide. The interviews conducted for the Training Guide helped identify educational needs for the full spectrum of experiences, from state DOTs with robust training programs to those with very little exposure to CSS training. The states interviewed ranged from 40 to 1800 in the number of staff they had trained in CSS. A few state DOTs had advanced to specialized skills training classes beyond an awareness and/or basic level of education. The CSS Training Summary for State DOTs Interviewed summarizes the characteristics of the CSS programs of states interviewed for the Training Guide. Following is a summary of the responses received in the interviews:

Who attends CSS training?

- Most states encouraged a diverse audience including multiple disciplines and levels of responsibility
- Several states with only a couple of CSS classes focused more on training staff in environment and design functional areas
- A small number of states focused on training staff in design only
- Some states reserved class spaces for external stakeholder groups including community members. States varied significantly in how many spaces were reserved (from just a few

up to 50% of spaces). A few states had separate CSS classes adapted specifically for non-DOT participants.

Does your CSS training address all functional areas?

- Most interviewees said that their awareness or basic CSS class applied to all functional areas of decision-making (planning through to maintenance).

What aspects contribute to effective CSS training?

- Instruction:
  - Be interactive and engaging, with groups working together on exercises
  - Use an interactive case study to lead a group through all the CSS steps of decision-making. Such an exercise can get participants to work together collaboratively and model the CSS behavior they are learning about.
  - Use case studies relevant to the state DOT (i.e., local examples that people can relate to, digest and comment on)
  - Use exercises that reflect real-life situations (examples: NCDOT's Quality of Life exercise and place-making exercise for NHDOT CSS basic class)
  - Include a half-day case study or field trip: "Field visits as part of training are essential"
  - Use a provoking questioning process (Socratic or Self Discovery Method)

- Instructors/Speakers:
  - Use local speakers - they carry more weight with the audience and can relate better (e.g., if you are using a national-level class, incorporate speakers who work in your state; if you are using a state-level class, incorporate speakers who work in the region where the class is held)
  - Invite executive leadership to start the class with a motivating speech
  - Use instructors who are: well-informed, experienced, articulate, clear communicators, project energy, think on their feet, collaborate with other instructors, respected by peers and at a high enough level to be credible
  - Use instructors who really believe in CSS and are motivated to do it (and so motivate others); need to be willing to lead by example in their own work
  - Take in participants' responses to course material, then recast material as needed; direct dialogue to be responsive to participant concerns

- Participants:
  - Encourage interdisciplinary participation to further add to the experience of DOT staff (citizens, advocacy groups, resource agency personnel, MPOs and RPOs, etc.)

- Adaptability:
  - Have opportunities for training to be expanded or shortened to match the audience and context (e.g. one-hour session at a conference and full 2-day course)

- Have multifaceted, flexible training. This is a problem with the NHI business model – they are locked into the course material, and cannot deviate because the booklets are printed well in advance. Training works best if it is tailored to the level of implementation in the state

How effective is your CSS training at changing attitudes and behaviors?

- When asked how effective the CSS training was in terms of changing attitudes (the way people think), almost all interviewees rated the trainees a 4 or 5 (most or nearly all trainees accept the CSS principles)
- When asked how effective the CSS training was in terms of changing behaviors (what people do), almost all interviewees rated the trainees a 3 or 4 (some trainees use the principles in their work)
- Some of the reasons given for the difference include:
  - Change is just hard, it takes time (its human nature)
  - Need a performance appraisal system in place to change behaviors
  - Need support from leadership to change behaviors
  - Have to make it the "law" (Need policies, procedures, etc. in place)
  - Need mentors to help assist people day-to-day with implementation
  - Need performance measures that reward CSS behavior

What needs to be improved with your CSS training?

- Have a policy or some type of directive in place before advancing a large training program
- Secure upper management support to give participants a sense of priority on implementing CSS principles
- Need to use local case studies not projects from other places in the country
- Need to do a better job with understanding context
- Need more examples of how to be flexible with design choices/decisions
- Focus less on environmental issues/NEPA
- Reflect how CSS can be incorporated into all scales of projects, from large to very small
- Need to do a better job discussing trade offs regarding safety and mobility
- Need to take the engineer's perspective into consideration in decision-making

Do you evaluate the effectiveness of your CSS training program?

- Very few of the state DOTs interviewed conduct formal evaluations of the effectiveness of their CSS training program. Examples of those that do can be found in Chapter 8 How Can the Effectiveness of a Training Program be Evaluated?

2. Building Knowledge and Skills Through Training Initiatives

2.1 What does a training program need to focus on to change behaviors?

The ultimate measure of educational effectiveness is to observe the person behaving in a way that is reflective of what has been learned. A behavior is defined as a "manner of acting or controlling yourself." (1) Changing a behavior is similar to changing a habit and requires a multi-dimensional approach to be successful. Stephen Covey's book entitled The 7 Habits of Highly Effective People (2), defines a habit as the intersection of knowledge, skill, and motivation (Figure A). CSS education should encourage behaviors (habits) in alignment with CSS principles, qualities and outcomes.

In order for a CSS training program to be effective, all three dimensions must be present: motivation, knowledge, and skill. "Without desire, we would have no motivation to change and improve ourselves. Without knowledge, we would not know why to change or what to change. Without skill, we would not be able to carry out a course of correction. All three elements play a vital role in change and improvement." (3)

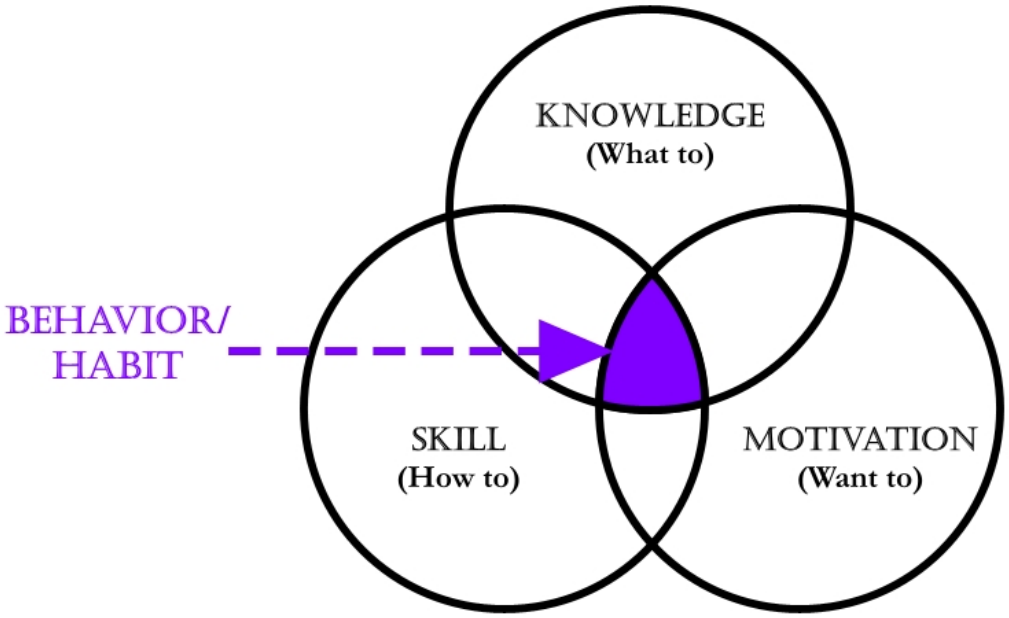

Figure A. Definition of a Behavior or Habit
Source: Adapted from Covey, Stephen R. *The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change*, 1989.

While all three dimensions (knowledge, skill, motivation) are necessary to change a behavior or habit, the Training Guide will address primarily the knowledge and skill dimensions (a brief discussion on motivation related to education is included below). Motivating change is the result of a broader range of initiatives that need to be implemented outside the realm of education, such as a clear agency vision supported by strong leadership, robust communication, accountability measures, agency-wide procedures that reflect CSS principles, and access to resources, as well as effective training.

The following brief discussion about creating change in an organization is adapted from a paper prepared by Janet D'Ignazio regarding an overview of change management for state DOTs as part of an implementation approach. Change implementation almost always requires a modification of individual process steps and tasks. The people executing those steps and tasks need to be trained in the new "way of work." Failure to provide training will result in employees that are frustrated and/or resistant to change. Looking at change management as a human issue identifies the three most important critical success factors (CSF) for institutionalizing organizational change:

1. Leaders of change need to help the people impacted understand why they need to change and what it will look like when the change is done
2. Leaders must provide employees with the resources and skills that they need to actually design and execute the change
3. Leaders must empower managers to implement the change and hold managers accountable for completing the change.

Assuring that these CSFs are met is the primary role of leadership in large scale change initiatives. Implementing change, however, is not just a leadership challenge. It is also a management challenge. This is particularly true when the proposed changes affect multiple organizational units, require new working relationships or processes, are expected to be implemented while maintaining current production or performance levels and are planned to be implemented simultaneously. The role of managers during a complex change process is to:

- Assure that the change envisioned by leaders is translated into action plans
- Reinforce with the staff the case for change and change vision developed by the leaders
- Assure timely and complete implementation of the action plans
- Monitor, measure and provide feedback to leaders about both the implementation progress and the overall success of the change agenda.

Motivation

Departments of transportation are hierarchical organizations bound by rules and requirements. Many circumstances make it difficult to motivate staff to follow CSS principles and qualities. Often, DOTs are hindered by staff retirements or turnover, leaving them with less experienced staff. Staff are accustomed to passing trends or initiatives brought in by newly-appointed senior managers or imposed by other jurisdictional agencies, and may adopt the attitude of responding minimally to new initiatives while waiting for the current "fad" to pass.

Following is a list of suggestions for how DOT leadership/managers can effectively utilize CSS training opportunities to motivate changes in behavior within the organization.

- **Motivate by aligning staff performance expectations with training:** Develop the course so that the purpose and outcomes of the training modules fit well with managers' expectations of staff upon their return to their jobs. Motivation will flow from perceived alignment of what's being taught with what's being expected in terms of job performance (actual alignment is even better).

  - Expectations of job performance change as the organization evolves, so classes need to acknowledge and provide updates to staff on these changes.
  - When possible, have a middle or senior manager speak at the opening of a course session to endorse the materials to be presented and to reinforce the message that staff will be expected to use the CSS knowledge and skills taught in the course back at their jobs.
  - When possible, have a middle or senior manager present at an appropriate session of the course to be available to answer questions or offer comments to reinforce the connection between the CSS knowledge and skills being taught and work place expectations for performance. In some cases this might be the concluding session where participants may be asked to reflect on what they've learned, how they will put their newly acquired knowledge and understanding to work in their day-to-day job activities and asked whether they perceive barriers to implementing CSS concepts in their jobs.
- **Motivate by building confidence to use CSS knowledge and skills through course exercises:** Develop the course with exercises and interactive discussions that allow participants to use the knowledge they are gaining and practice the skills being taught to build confidence in using CSS knowledge and skills in their jobs.
  - Including class participants from a broad range of external stakeholder groups – citizens, resource agencies, MPO's and RPO's, consultants, advocacy organizations – can help motivate DOT staff by breaking down stereotypes about uncooperative project team members and building mutual understanding among diverse stakeholders in team building exercises and without the pressures of immediate project issues and deadlines.
- **Motivate by acknowledging that it will take time to acquire CSS skills and become proficient at practicing them, and that mistakes will be made:**
  - Instructors should acknowledge this learning curve to make participants more comfortable with undertaking new approaches to their work.
  - Instructors will help put participants at ease if they tell their own stories about mistakes made and improved outcomes once CSS skills were put into practice.
  - Senior and middle managers can deliver these messages as well; that they will support staff to gain experience and a level of comfort at practicing CSS skills and that they will be supportive through the implementation phases of integrating the CSS philosophy in the agency.
- **Motivate by including enthusiastic testimonials:** Skilled instructors, experienced with CSS projects, who are energetic champions of CSS can motivate some participants through their own energy, enthusiasm, and testimonials.
  - Classes can include outside speakers (perhaps a luncheon speaker) who can relate positive experiences with CSS projects or CSS concepts.
- **Motivate by fitting CSS training into a robust CSS integration framework:** Create a buzz about the value of CSS training through strong DOT leadership for CSS integration, implementation of a CSS communications plan, recognition and rewards for meeting CSS principles and qualities, and performance measures based on meeting CSS principles and qualities.
  - Implementation of a comprehensive CSS integration plan can make a huge difference in motivating DOT staff to become knowledgeable about CSS

principles and practice because it will be clear that the training class is not a "one-time" thing.

- If CSS training classes communicate measures of workplace success (and if managers support these success measures) that are tied to understanding CSS and being skilled at CSS practices, participants will be motivated to acquire the understanding and skills.

Knowledge and Skills

Different levels of learning required to build knowledge and skills (professional capacity) must be addressed to meet the goals of any training program. Bloom's Taxonomy of Cognitive Levels describes how levels of learning are hierarchical (Figure B) with knowledge-building representing the two lower levels and skill-building representing the four upper levels. Each lower level must be mastered before progressing to the next highest level. Click on the graphic for a larger
view.

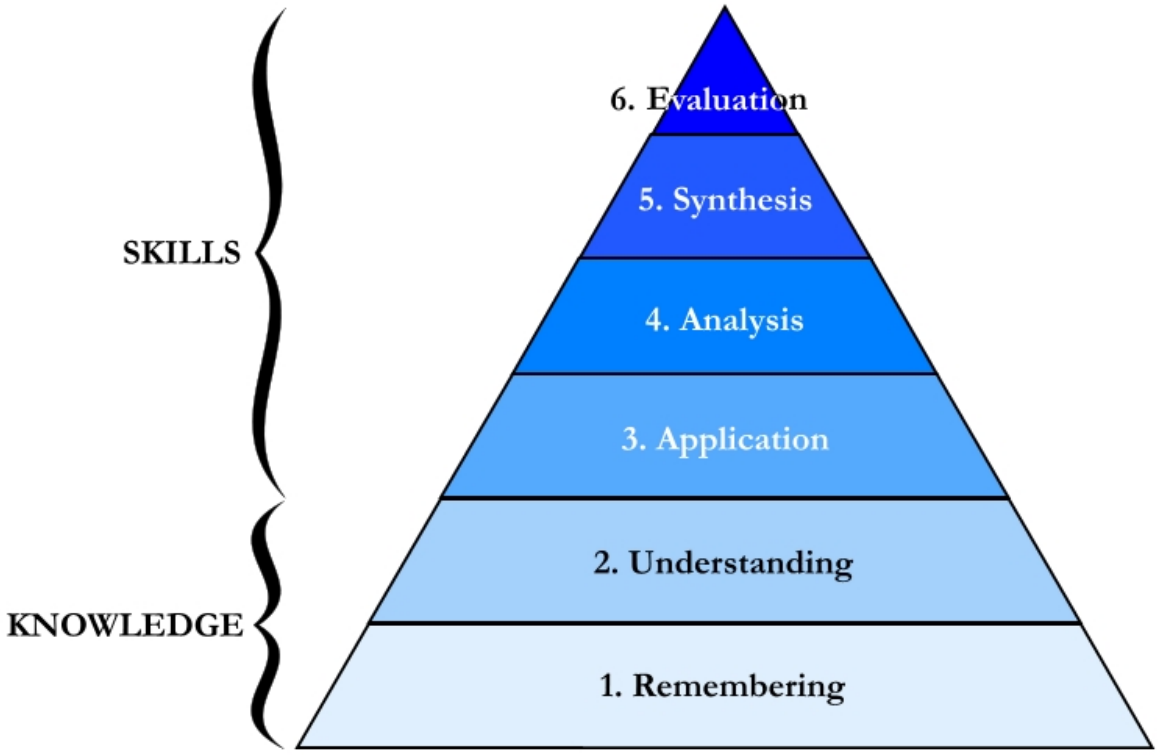

Figure B. Bloom's Taxonomy of Cognitive Levels
Sources: Adapted from Anderson, L W, & Krathwohl D R (eds.). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Longman. 2001. AND Bloom, B S (ed.) *Taxonomy of Educational Objectives, the classification of educational goals – Handbook I: Cognitive Domain* New York: McKay. 1956.

Figure C below provides a definition for each of the six levels of learning as well as suggested methods to stimulate learning for each level. Click the graphic for a larger view. Understanding how people learn is critical to leading participants in a training class from lower to higher levels of learning. Asking participants to jump to a higher level (such as asking them to analyze how to more effectively reach stakeholders in a case study) before they have acquired the knowledge

necessary (such as a toolbox of public involvement techniques and examples of how they could be applied) could lead participants to be frustrated and "turn off" in terms of learning. More discussion on the levels of learning and how they can be applied to CSS training will be included in the following sections and chapters.

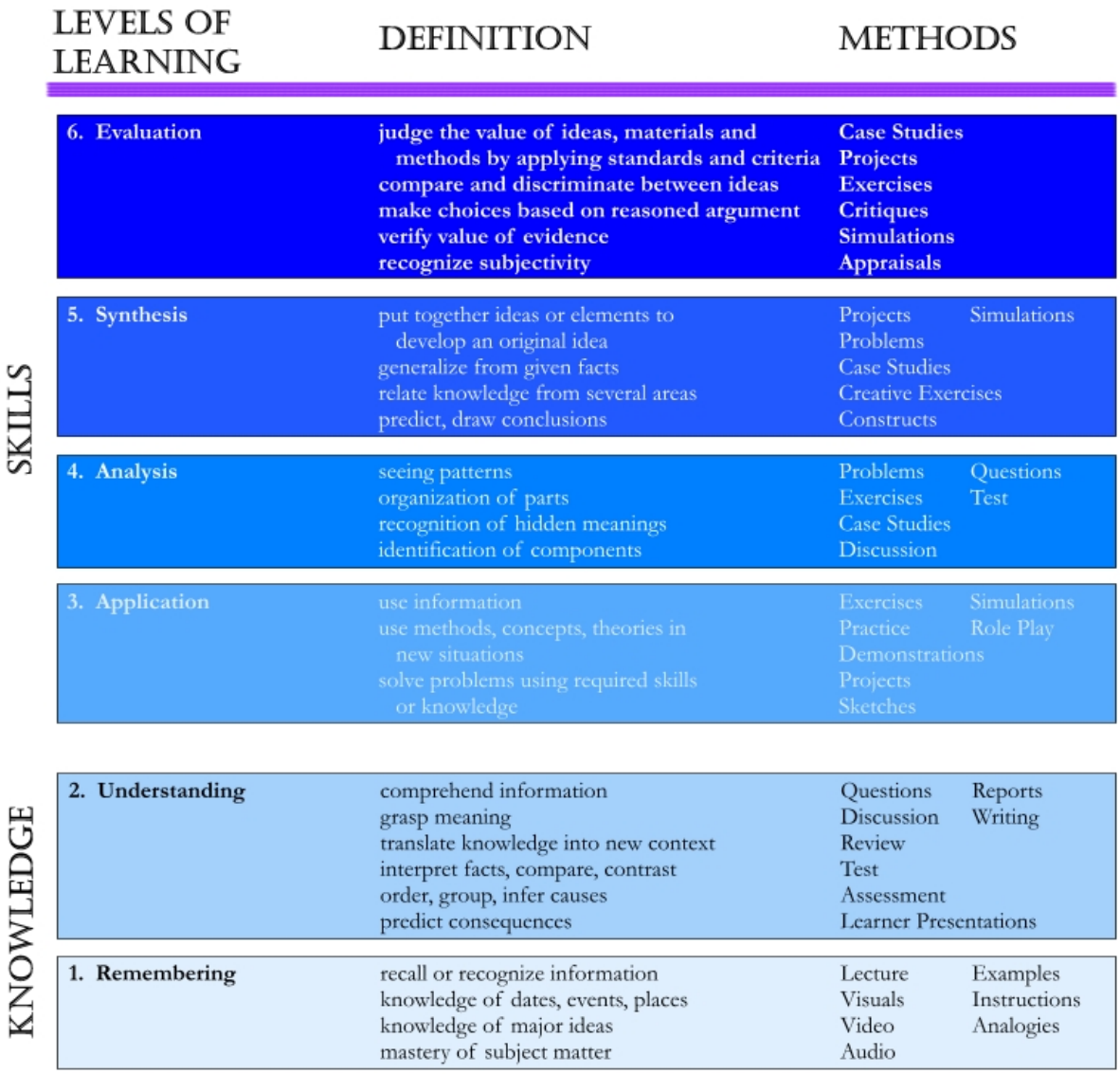

Figure C. Definitions and Methods for Bloom's Taxonomy of Cognitive Levels
Sources: Adapted from Anderson, L W, & Krathwohl D R (eds.). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Longman. 2001. AND Bloom, B S (ed.) *Taxonomy of Educational Objectives, the classification of educational goals – Handbook I: Cognitive Domain* New York: McKay. 1956.

2.2 What are the learning goals of a CSS training program?

Establishing a mission, learning goals and objectives for a CSS training program are the first steps towards aligning organizational goals with CSS-related learning outcomes. This process is similar to the development of an educational curriculum. The aim is to have a clear

understanding of the knowledge, skills and values that an employee/student should have to be considered proficient at implementing CSS principles, qualities and outcomes for their specific job responsibilities.

Definitions of Mission Statement, Goals and Objectives

"A mission statement is a brief statement of the values and philosophy of the agency/program. It should guide decision-making about the learning outcomes and provide a framework for setting learning goals". It should also be aligned with the agency's mission and vision (strategic plan). (4)

Goals are statements of broad, long range intended outcomes of the program. They describe the knowledge, skills and values expected of students (executives, manager, supervisors/staff). "Goals flow from the mission statement and provide a framework for the objectives. Goals reveal meaningful expectations that are achievable and assessable through related objectives. Goals provide the framework for writing specific learning objectives." (5)

"Objectives are brief, clear statements of learning outcomes that flow from goals. They should be written using action words that specify observable and measurable behaviors".

"Effective objectives:

- Tell us how we know when a goal has been achieved
- Use action words that specify observable behavior
- Are realistic and achievable
- Are measurable
- Use simple language"

Based on information collected during interviews, literature review of experiences with CSS-related education, and the AASHTO-FHWA CSS Strategic Plan Effort (which includes the 1998 Thinking Beyond the Pavement Principles), a suggested mission statement and goals for a CSS training program are included below. Specific learning objectives are not proposed in the Training Guide as they are highly dependent upon the state DOT's mission, goals, strategic business plan, state laws, funding processes, internal policies and procedures, customer/stakeholder interests and needs as well as the state's experience with implementing CSS. Learning objectives for existing courses offered by state DOTs are presented in the Existing CSS Classes tables as examples for organizations building their own courses.

Suggested CSS Training Program Mission Statement and Learning Goals:

Mission Statement: To prepare and motivate transportation professionals with the knowledge and skills to implement context sensitive solutions throughout all phases of project delivery (long range planning and programming, environmental, location and design, construction, operations, and maintenance). “CSS is a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions”(6).

Goal Statement: Understand the concepts of CSS including the evolution of CSS and how CSS principles, qualities and outcomes relate to all phases of project delivery and to the organization's mission.

Goal Statement: Explain and demonstrate the benefits of integrating CSS concepts at both the organizational level and the project level affecting project delivery processes and project outcomes.

Goal Statement: Apply CSS principles and qualities to consensus-based decision-making processes throughout all phases of project delivery including establishing a problem definition, a stakeholder vision, evaluation criteria, alternatives development and analysis, solution identification and implementation. The term stakeholder here includes all who have a stake in the project outcome: DOT staff, consultants, resource agencies, the public, etc.

Goal Statement: Demonstrate the use of CSS concepts and principles through flexible designs that reflect the given context including different types and scales of projects through out all phases of project delivery. Flexible design implies a well informed understanding of nominal verses substantive safety implications for all modes of travel (i.e. bike, pedestrian, rail, transit, etc.)

Goal Statement: Employ stakeholder involvement tools and techniques appropriate for the context and meaningfully engage a full range of stakeholders in the decision-making process including development of a problem definition, vision, evaluation criteria, alternatives to be studied, and solution identification.

Goal Statement: Use an interdisciplinary team to facilitate all phases of project delivery taking advantage of the skills and expertise of DOT staff, consultants, resource agency staff and a full range of community stakeholders. The interdisciplinary team should be utilized to fully understand the context of the project/plan and the values of the community and to collaboratively seek creative solutions to agreed upon problems.

Goal Statement: Demonstrate a comprehensive understanding of contexts including transportation (mobility/accessibility), human/built and natural environments as well as the community’s perception of a good quality of life. Understanding context includes recognition of multi-modal needs including bike, pedestrian, rail and transit.

Goal Statement: Foster continuing communication and collaboration to achieve consensus throughout all phases of project delivery including both process and outcome goals for both internal and external stakeholders.

Goal Statement: Foster staff driven integration of CSS in projects and organizational functions through establishing performance measures based on CSS principles and qualities.

Goal Statement: Facilitate implementation of CSS by transportation agency staff and their partners through development of individual action plans.

These goal statements are closely linked to the CSS Principles, Qualities and Outcomes from the FHWA-AASHTO CSS strategic planning process, which are repeated below. For more information, a table showing how the CSS training program goal statements are linked to the CSS qualities and outcomes is provided.

CSS Principles: These core CSS principles apply to transportation processes, outcomes, and decision making.

- Strive towards a shared stakeholder vision to provide a basis for decisions.
- Demonstrate a comprehensive understanding of contexts.
- Foster continuing communication and collaboration to achieve consensus.
- Exercise flexibility and creativity to shape effective transportation solutions, while preserving and enhancing community and natural environments.

CSS Qualities: Context sensitive solutions is guided by a process which...

- Establishes an interdisciplinary team early, including a full range of stakeholders, with skills based on the needs of the transportation activity.
- Seeks to understand the landscape, the community, valued resources, and the role of all appropriate modes of transportation in each unique context before developing engineering solutions.
- Communicates early and continuously with all stakeholders in an open, honest, and respectful manner, and tailors public involvement to the context and phase.
- Utilizes a clearly defined decision-making process.
- Tracks and honors commitments through the life cycle of projects.
- Involves a full range of stakeholders (including transportation officials) in all phases of a transportation program.
- Clearly defines the purpose and seeks consensus on the shared stakeholder vision and scope of projects and activities, while incorporating transportation, community, and environmental elements.
- Secures commitments to the process from local leaders.
- Tailors the transportation development process to the circumstances and uses a process that examines multiple alternatives, including all appropriate modes of transportation, and results in consensus.

- Encourages agency and stakeholder participants to jointly monitor how well the agreed-upon process is working, to improve it as needed, and when completed, to identify any lessons learned.
- Encourages mutually supportive and coordinated multimodal transportation and land-use decisions.
- Draws upon a full range of communication and visualization tools to better inform stakeholders, encourage dialogue, and increase credibility of the process.

CSS Outcomes: Context sensitive solutions leads to outcomes that...

- Are in harmony with the community and preserve the environmental, scenic, aesthetic, historic, and natural resource values of the area.
- Are safe for all users.
- Solve problems that are agreed upon by a full range of stakeholders
- Meet or exceed the expectations of both designers and stakeholders, thereby adding lasting value to the community, the environment, and the transportation system.
- Demonstrate effective and efficient use of resources (people, time, budget,) among all parties

2.3 How can a CSS training program address all levels of learning?

A training program should begin with identification of a mission, goals and objectives as described in the previous section. The next step is to develop a framework that identifies the type of classes needed to meet the goals and objectives and address the hierarchical levels of learning described in Section 2.1.

What is a CSS Training Framework?

A CSS training framework describes the "big picture" of how different CSS training classes relate to each other, in terms of the targeted audience, topics covered, and/or goals addressed. A framework is often depicted graphically to illustrate the overall purpose and strategy of the CSS training program. It may also be referred to as a CSS educational framework if non-classroom elements are included, such as peer exchanges or conferences. Two state DOTs have used CSS training frameworks: Minnesota and New York.

In order to address all of Bloom's levels of learning, three types of training are necessary:

Awareness Training: The intent of CSS awareness training is to educate participants on the CSS philosophy including the principles, qualities and outcomes of a CSS process. This training is typically limited, from 1 ½ hours to ½ day sessions, and is designed to reach a large number of people. This type of class addresses the lower learning levels (Figure D below) for the first three CSS training program goals. Awareness classes are described in greater detail in Chapter 4 and examples of training materials are provided. This type of class is usually developed to:

- Explain what CSS is and is not

- Introduce the agency's understanding of the CSS attitude or mindset (i.e. policy statements)
- Discuss how decision-making is affected by the CSS philosophy
- Establish employee expectations

Basic Training: The intent of CSS basic training is similar to that of awareness training, but this type of course provides more information by touching on all of the CSS training program goals listed in Section 2.2 and addresses more levels of learning (Figure D below). These classes are usually 2 to 3 days and include opportunities for some skill building through group exercises such as case studies and/or field trips. In addition, these classes usually allow for a multi-disciplinary audience, which encourages shared learning through a wide range of project delivery experiences. Figure D below illustrates that basic education does not address all the levels of learning because there is simply not enough time to learn and practice all the skills needed for CSS implementation. However, a basic course provides the foundation for moving forward to more specialized training and helps give employees a common mental map of the CSS approach to transportation project delivery. Basic classes are described in more detail in Chapter 5 and examples of class curriculum for existing basic training classes are provided.

Specialized Skills Training: The intent of specialized skills training is to augment previous training by providing each functional area of project delivery with the appropriate knowledge and skills to implement CSS in their day-to-day work. Specialized skills training addresses all the levels of learning for each functional area (Figure D) and covers all the learning goals in comprehensive detail. Chapter 6 describes specialized skills classes in greater detail and examples of existing specialized training classes that are linked to CSS topics and functional areas of project delivery are provided.

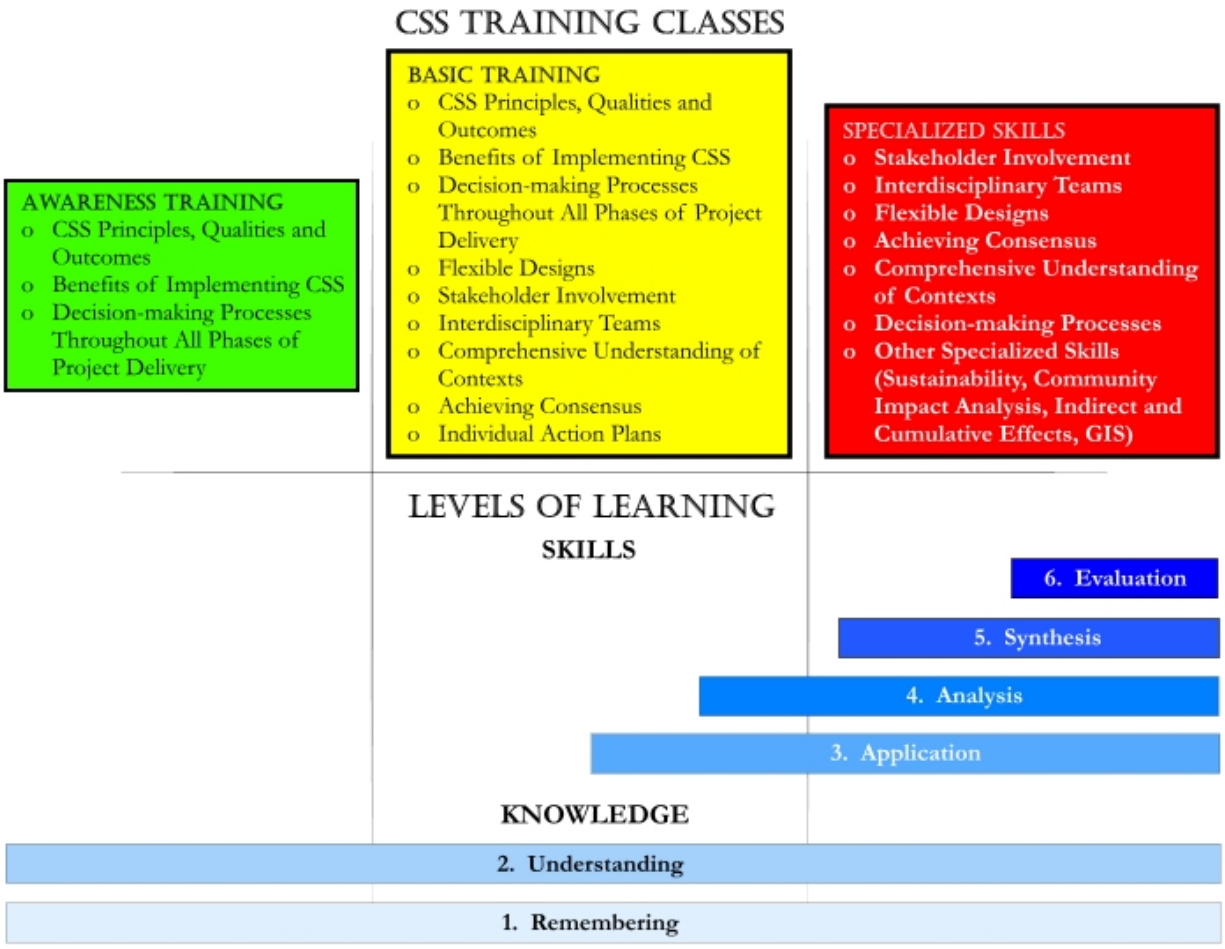

Figure D. Conceptual CSS Training Framework

The Conceptual CSS Training Framework (Figure D) is a suggested way to organize the overall learning goals of a CSS training program and align them with the levels of learning. As illustrated, awareness training addresses only the lowest levels of learning (remembering and understanding), basic training addresses application and some analysis, but specialized skills training is necessary to reach the highest levels of synthesis and evaluation. Recall that behaviors cannot change without addressing all the levels of learning, as well as motivating employees through leadership and performance accountability techniques.

Although each type of class has its purpose and role in an overall training strategy, it may not be necessary for every state DOT to offer all types of classes. Each state DOT is encouraged to determine their staff's educational needs to determine their particular training needs (this translation is discussed in Chapter 3). Some states will not benefit from awareness training, but others will find it extremely useful (see Chapter 4). Others may have already completed vast amounts of basic training and need to focus on developing their menu of specialized skills classes (see Chapter 6). The purpose of the framework is to help each state DOT think through their unique needs and develop a program that reflects their particular set of circumstances and advances the overall purpose of their CSS training program. This framework is highly adaptable

and flexible to highlight areas identified as educational needs. This framework can also be used to identify non-training methods to build knowledge and skills such as peer exchanges, seminars, etc. (see Chapter 7: Educational Support Network)

2.4 Who should attend CSS training?

State DOTs are hierarchical organizations, with executives at the top, moving down to managers, supervisors and finally staff. Individuals who serve at these organizational levels have different roles and responsibilities to carry out the daily work of the transportation agency. As such, individuals in each of these roles need to know and do certain things to ensure that CSS is integrated into the agency's day-to-day business.

As applied in the Training Guide, the term:

- **"Executives"** refers to the strategic leaders of the organization who set the vision and allocation of resources across the organization. Executives are often political appointees (e.g. secretary, chief deputy secretary, deputy secretary, highway commissioners).

- **"Managers"** are the next level down and typically lead the functional areas (e.g. head of preconstruction, operations or planning). Managers have the responsibility for translating the executives' vision into daily work and using resources allocated to them to fulfill the overall organizational goals/vision.

- **"Supervisors and staff"** are the people responsible for carrying out the day-to-day functions of the organization.

These definitions are not hard and fast, and will vary by organization as each is unique. What is particularly important in order to effectively implement CSS are the connections between the levels, both bottom-up and top-down. Executives focus on customer delivery - the overall outcome of the department as a whole. Managers focus on an area or department that contributes to that overall outcome. Staff focus on completing a particular task associated with a particular project for their department. CSS implementation works from the bottom up, with staff making day-to-day changes that affect the overall customer delivery that executives are concerned about. But the vision to implement CSS must come from the top down, with executives taking the lead to implement CSS principles in all departments.

Figure E below illustrates the relationship between the hierarchical levels of employees (executives, managers, and supervisors/staff) and their CSS educational needs. Executives have the greatest leverage to transform an agency's mission and performance by requiring staff to be accountable for CSS implementation, but have little time or necessity for extensive training on specific skills. But executives, as with all agency employees, can benefit from awareness education to understand the benefits of implementing CSS. One effective means for executives to become familiar and comfortable with the content of CSS Awareness training is for them to serve as lead off speakers to deliver it. Managers also have a great deal of influence over CSS integration and need at least a basic level of CSS education because they deal with day-to-day decisions that affect project outcomes. So managers could benefit from awareness, basic, and

limited specialized skills courses (e.g., the Chief Engineer might benefit from a specialized skill course in design flexibility). Practitioners (supervisors and staff) in all functional areas of project delivery, in addition to awareness and basic classes, need the most specialized skills training to gain the skills and confidence to implement CSS for their unique roles and responsibilities.

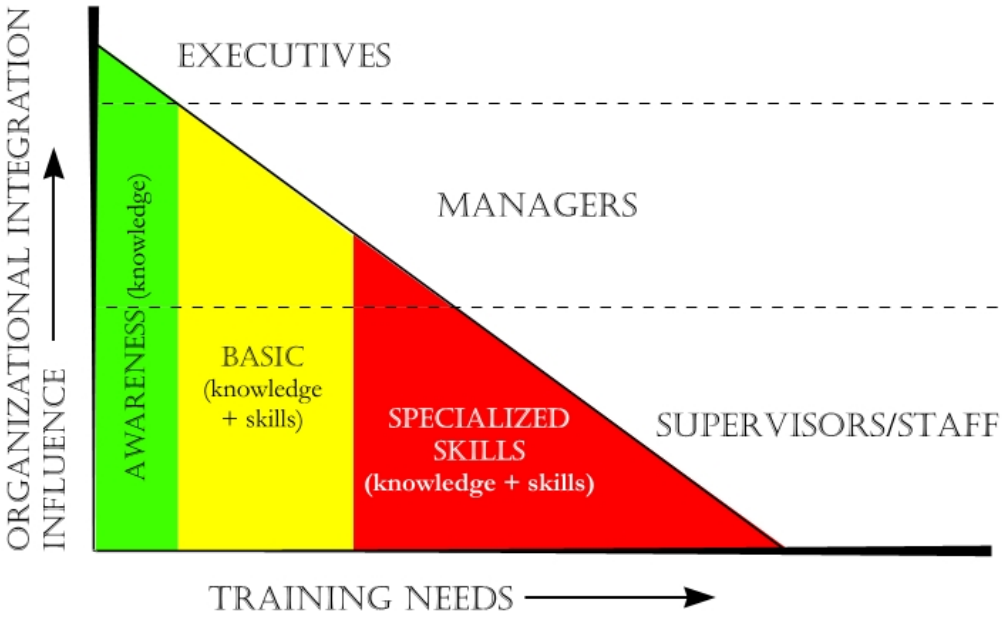

Figure E. CSS Educational Needs by Organizational Role

Figure E was created based on the interview responses from state DOT and FHWA personnel to the question, What do executives, managers and supervisors/staff need to know and do in order to integrate CSS into day to day business practice? The responses generally follow the idea that everyone needs to know certain basic concepts of CSS, but that the skill and detail level needs to increase with staff making the day-to-day decisions. The responses can provide insight into what motivates each role to integrate CSS into business practice and how CSS training may most effectively be addressed to each group.

Knowledge (What to and why to):

Executives:

- What is CSS?
- Benefits of CSS
- Business case/approach (Includes addressing change)
- Alignment of CSS process/decision-making
- Organizational alignment (how CSS affects a DOT's business plan: political will, statewide issues and needs, financial resources, staff needs, structural issues, training needs, etc.)
- Performance measures for CSS
- Leadership/champion

- How to build partnerships with other agencies, stakeholders, etc.

Managers:

- What is CSS?
- Decision-making and process alignment
- Benefits of CSS
- Value of inter-disciplinary teams (including partnerships)
- Organizational alignment (How CSS affects a DOT's business plan: political will, statewide issues and needs, financial resources, staff needs, structural issues, training needs, personnel assignments, etc.)
- Flexibility in design: risk management
- Communication skills: facilitation, team building, etc.
- Stakeholder involvement (includes customer satisfaction)

Supervisors/Staff:

- What is CSS? (specifically what to do for process alignment)
- Management support
- Specialized skills for functional area of work
- Communication skills
- Stakeholder involvement methods
- Case studies of CSS projects
- Design flexibility
- Process implementation and decision-making
- Understand how to define context, assess multiple dimensions of CSS aspects (transportation need, community values, human and natural environment)

Skill (How to):

Executives:

- Policy direction and organizational alignment (polices, directives, procedures, guidelines, training, performance measures, etc.)
- Process/decision-making alignment (gap analysis)
- Leadership/champion
- Reward/recognize successes
- Partnerships

Managers:

- Implement procedures that are in alignment with CSS (including inter-disciplinary teams)
- Demonstrate leadership (championing, mentoring, etc.)
- Resource alignment with CSS process (including training)
- Empower their staff
- Be good communicators/facilitators
- Implement performance assessment
- Benefits

- Customer satisfaction
- Flexibility and risk management

Supervisors/Staff:

- Implement the new aligned process (specialized skills training)
- Communication skills (stakeholder involvement)
- Flexible process and design

Motivation (Want to):

Executives:

- Benefits of CSS (business case and customer satisfaction case)
- Alignment of transportation mission with quality of life goals
- Empower staff

Managers:

- Business approach/benefits (customer satisfaction and bottom line)
- Supported by executives

Supervisors/Staff:

- Benefits of CSS
- Customer satisfaction
- Management support

Footnotes:

(1) http://www.google.com/search?hl=en&defl=en&q=define:behavior&sa=X&oi=glossary_definition&ct=title

(2) Covey, Stephen R. The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change, 1989, page 47.

(3) The 7 Habits of Highly Effective People, Training Manual, copyrighted 1986, 1996, 1998. Franklin Covey Co., page 199.

(4) Department Guidelines for Student Learning Assessment Plans: Building a Culture of Evidence, San Diego State University, http://dus.sdsu.edu/assessment/

(5) Department Guidelines for Student Learning Assessment Plans: Building a Culture of Evidence, San Diego State University, http://dus.sdsu.edu/assessment/

(6) Results of Joint FHWA-AASHTO CSS Strategic Planning Process, Summary Report, March, 2007

3. How Can Educational Needs be Translated Into a CSS Training Program?

3.1 Identify learning goals and objectives

Ideally, the individual or group charged with developing or revising a state DOT's CSS training will begin by developing a mission statement and learning goals and objectives for a comprehensive CSS training program (see Section 2.3 for more detail on comprehensive training programs). The mission statement, goals and objectives should cover the entire CSS training program, then specific courses should be identified to address particular goals and objectives. The role of goals and objectives is discussed in more detail in Section 2.2, and a suggested list of broad CSS learning goals for a training program is provided in that section. State DOTs may wish to adapt or expand upon this list of CSS goals for the purposes of their own training program, and may want to create specific objectives based on their own needs. If a DOT has never conducted CSS training before, the group may want to consider developing the mission statement and goals and objectives for both awareness and basic training but wait to consider specialized training needs until they have more experience with the awareness and basic training efforts.

Sometimes training programs are developed more organically, with goals and objectives developed for specific classes as the opportunity to offer them arises. This type of training program development can also be successful, but some reflection on how the goals and objectives of specific courses work together to accomplish an overall mission is necessary for the program to be most effective.

> **What is a CSS Task Force and who should be part of it?**
>
> The group charged with oversight of developing the CSS training, often called a task force, work group, or committee, ideally should employ a CSS approach by including a diverse range of disciplines and staff from the full spectrum of DOT offices. States may wish to include one or more representatives from partner groups as well (e.g. MPO or RPO staff, resource agency staff). If one or more CSS-related courses have already been given at a DOT, the group should include several staff who attended these courses.

Identify Training Needs

To be most efficient and effective, a CSS training program needs to have an overall mission statement, goals and objectives as discussed above, but also an understanding of what staff already know and what they need to reinforce or learn ("educational needs"). Chapter 2 includes an in-depth discussion of the CSS knowledge and skills that DOT personnel need to have, but each state will need to determine the gaps between that ideal set of knowledge/skills and the current knowledge and skills of the staff in order to understand how to most effectively target training. For example:

- The CSS training task force may learn that most employees have a basic understanding of CSS, but that many lack an understanding of how CSS should change their decision-making processes.

- Another state might learn that many design engineers still believe that CSS costs more and compromises safety.

These educational needs can inform the learning goals, objectives and outcomes of the CSS training classes proposed, as well as the proposed audience, to ensure that training is targeted appropriately. Having identified specific needs before training will also set up an effective assessment of the training afterwards, to see whether these issues or gaps have been corrected and the learning goals achieved (see Chapter 8 for more discussion on assessment). The list below offers some possible methods for a CSS task force or committee to employ in order to understand the CSS educational needs of the staff (one or several of these methods may be used):

1. **Use existing classes as examples.** The task force could review the goals and objectives for existing awareness or basic courses, then discuss them to understand the choices in emphasis and in skills covered made by different states. Based on the group's discussion of their own DOT's needs in terms of CSS (see Figure C and Figure D), the members could seek consensus on learning goals and objectives for their proposed courses.

2. **Survey the staff.** The task force could use the list of training program goals provided in Section 2.2 to develop a staff survey to assess existing knowledge and skills related to CSS and identify gaps in needed skills. The group would want to ask a diverse range of staff to respond to this survey; diverse both in terms of functional area and hierarchy (e.g., executives, managers, supervisors and staff). Based on the survey results as well as their own experience, the task force could develop the goals and objectives for CSS training courses needed. See an example of such a survey, and Chapter 8 for more information on assessment of knowledge and skills.

3. **Use an awareness class to identify further needs.** The task force could first focus on developing a CSS awareness class, using the examples provided from other states to help them develop goals and objectives for this class. The group could then include at the end of this class a discussion of further training needed to implement CSS and the skills that participants believe they need to develop. Alternatively or in addition, the task force could develop an evaluation form for the awareness session that requests information from participants about areas of knowledge, understanding and skills that they believe they will need to achieve CSS principles in their work. Such an evaluation may also be conducted as a followup after participants have returned to work for a period of time (see Chapter 8). This method may work best in a state where little or no training has taken place to date, and staff need to have a common understanding of CSS (which awareness training will provide). The box below describes how awareness training has been used to subsequently identify educational needs at one state DOT.

Tennessee DOT (TDOT) Approach to CSS Training as Part of Organization-wide CSS Implementation

Tennessee's initial efforts to incorporate CSS started when eight highly controversial projects were restarted after evaluating the project experience to date. The organization had not embraced CSS formally at the senior leadership level, so although project

managers had been asked to use a CSS approach, they had little direction in how to do so. A review of project results after about a year's time found successes and shortcomings in employing CSS principles and yielded a clear message that TDOT project managers felt they needed more clarity about TDOT senior managers' understanding of CSS and more direction and support from senior management in their efforts to implement CSS principles in their projects. Project staff felt strongly that CSS training should be a high priority for the organization.

TDOT created a CSS Leadership Group composed of 18 senior managers from all agency functional areas and with district representation. The group developed and reached consensus on a CSS Statement of Commitment for the agency. The group provided support to deliver a 1 1/2 to 2 hour CSS Awareness course offered in 2006 to introduce over 700 TDOT staff to the CSS Statement of Commitment, to explain how CSS principles affect the project development process, to describe current TDOT project examples that illustrate various CSS principles and to set the expectation that all TDOT staff will use CSS principles in their work. Involving senior and middle managers directly in developing and giving this awareness training had the additional benefit of making them visible and articulate spokespeople and champions for the adoption of the CSS philosophy within the organization.

Following this initial training effort, TDOT's CSS coordinator completed an organizational needs analysis based on a model developed for the AASHTO/FHWA CSS Peer Exchange held in Baltimore, MD in 2006. This analysis gave an overview of organization-wide implementation of CSS, agency actions, skills training and demonstrations of agency commitment. This analysis provided background information as members of TDOT's Leadership Group were asked to complete a gap analysis organized by functional area to understand the agency's strengths and gaps in integrating CSS principles in its work. The gap analysis was organized following metrics that FHWA had used to query FHWA Division Offices about DOT CSS implementation: CSS commitment, policies and practices; CSS training; CSS integration into projects and planning studies; stakeholder involvement; and use of interdisciplinary teams (see the FHWA CSS Implementation Survey).

Based on the gap analysis, TDOT's Leadership Group developed a CSS Action Plan in early 2007. CSS training, both for a holistic basic course and specialized skills courses, was identified as a high priority to accomplish TDOT's stated goal to mainstream use of CSS principles in all its work. Led by a member of the CSS Leadership Group, a staff task group was organized to develop a 2-day basic CSS training course to be offered in 2008-2009.

4. **Use current projects.** The task force could have a discussion of one or two projects, using the CSS definition, principles and qualities as a means to understand how successful the project team(s) had been at achieving CSS principles and qualities in those projects. By discussing what had gone well with the project in terms of achieving CSS principles, and where there may have been shortcomings in achieving the principles and qualities, the group could identify needs for CSS training. Reviewing the list of training

goals provided in Section 2.2, the task force could then focus on the goals most closely aligned with the needs they identify through the project review and then seek consensus on a mission, goals and objectives for CSS training tailored to the state's needs.

5. **Conduct a gap analysis.** In the case of a state DOT that is looking comprehensively at implementing CSS principles throughout its organizational units and projects, there may be an opportunity to gain understanding of the DOT's CSS training needs through a CSS organizational gap analysis. A gap analysis identifies what areas (training, agency-wide procedures, vision, accountability, resources, and communication) need attention in order to more fully implement CSS. The information provided by a gap analysis can provide the basis for an action plan to more fully implement CSS and for explaining to executive-level leadership the resources that will be necessary to achieve full implementation. Organizational and project-level gap analysis are discussed in the CSS Integration Guide, which is under development (see box below). For training, the kinds of questions that a gap analysis could include are:

    - Has the organization established a set of learning goals for CSS-related training? If so, what are these goals?
    - What CSS training has your staff received to date? How many staff have been trained? What skills did this training cover? Do you believe the training was effective in enabling staff to achieve CSS principles in their work?
    - Have your staff members received any other types of training that would help them achieve CSS principles in their work? If yes, please describe.
    - What are specific training needs of your staff so they can gain CSS-related skills and the ability to use them with confidence and ease?
    - How many of your staff need CSS awareness training, basic training and /or specific skills training?
    - Have you established assessment practices to evaluate the effectiveness of your CSS training program?

CSS Integration Guide

The Integration Guide is a companion project, also commissioned by FHWA, whose product is forthcoming. The Integration Guide offers technical guidance to State Departments of Transportation (DOTs) senior leaders and practitioners seeking to comprehensively integrate CSS principles in planning and project development. The Integration Guide is intended to provide information to executives interested in CSS implementation organization-wide as well as practice-level integration. Technical guidance will be supported by an Implementation Framework to assist in addressing organizational change efforts needed to integrate CSS principles into transportation operations. The Guide also includes instruction for the application of an organizational gap analysis that can be tailored to the user's specific organization.

For more information, contact: K. Lynn Berry, FHWA (KLynn.Berry@fhwa.dot.gov 404-895-6212)

3.2 Identify methods

Educational needs identified by the CSS task force should not only inform the selection of CSS goals, but the extent to which they need to be addressed, and the audience to which they are applicable. For example, one CSS goal is: “Demonstrate the use of CSS concepts and principles through flexible designs that reflect the given context including different types and scales of projects through out all phases of project delivery.” Analysis by the task force might indicate that senior staff have a good understanding of flexible designs, the mid-level staff have some understanding but need to obtain more in-depth knowledge and skills, and incoming new design engineers need to be introduced to the design flexibility concepts in addition to general CSS concepts. Using this information, the task force may determine that mid-level design staff need to take a specialized skills course in design flexibility, while incoming new staff should take a CSS basic course and then specialized skills course focusing on design flexibility. In this manner, a CSS training program can be sketched out, indicating the CSS goal, specific staff groups who need improvement in that area, the extent to which they need to be addressed, and the type of course that could fulfill those needs.

Figure F below provides examples illustrating the translation from the educational needs described by the task force to specific CSS courses and course delivery. Recall that Figure D and Figure E assist this translation by illustrating which CSS topics (goals) are most appropriately addressed in each type of CSS training course: Awareness, Basic and Specialized; and the appropriate level of depth of CSS knowledge for different employee groups.

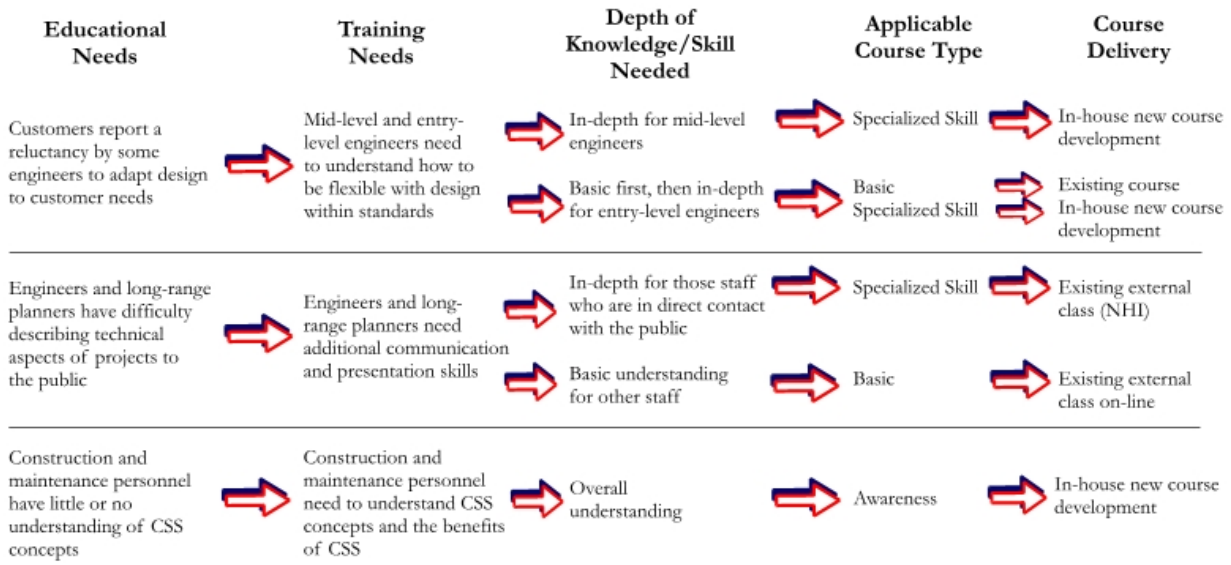

Figure F. Translating Educational Needs to Course Delivery

After sketching out the specific knowledge and skill needs for the training program to address, the next step is to determine how to find courses to fulfill those needs. There are generally three course delivery options available:

- **Existing courses offered by your state DOT.** If a state DOT has existing CSS training courses, these courses could be utilized to meet the identified knowledge and skill needs, but they should be revisited to ensure that the CSS goals, as well as principles, qualities, and outcomes are appropriately addressed in the content. The state DOT's more specific learning objectives should also be compared with the existing learning objectives of the course(s) to ensure compatibility. This sample worksheet could be used to facilitate analysis of how each existing course meets the program's learning goals. For example, notes on whether the goal/topic is currently introduced, practiced or reinforced in each course could be made in each column. The worksheet could also be used to note which goals/topics need more attention in course revisions.

- **Existing external course offered by a third party.** If an existing course is not available at the state DOT, external courses may exist that the DOT could send staff to attend, or host at their location. Utilizing a third-party course can potentially reduce the amount of preparation and coordination necessary on the part of the state DOT training staff. Specialized skills classes, in particular, lend themselves to being used without extensive customization to a particular state DOT. Awareness and basic courses, however, generally need to be tailored to the specifics of the state to be most effective. National Highway Institute, National Transit Institute and the American Society of Civil Engineers offer a number of specialized skills types of courses, as well as consulting firms. These can be accessed through the Existing CSS Classes page. The modules and/or learning objectives of the courses are listed wherever possible to facilitate the identification of suitable courses to meet the needs of state DOTs. For the Specialized Skills courses, a table indicating the appropriateness of each course for different functional areas and different CSS topics is available to better extract the most appropriate courses for any particular set of needs.

- **In-house development of a course by state DOT**, with or without consultant assistance. If existing courses are unavailable or do not meet the needs of the staff, the DOT may elect to develop their own course, either using staff or a consultant or a combination of both. See the box below for some examples and benefits of in-house course development. To provide examples for state DOTs interested in developing their own courses, existing DOT courses are included here. Invariably, adaptations will need to be made to these examples in order to adequately meet staff learning needs in a different state. The existing class descriptions can even become the starting points for discussions among staff as to what their own DOT's course should look like.

Benefits from Guided Collaborative Development

Although significant staff time and effort is involved with in-house development of a CSS course, whether assisted by a consultant or not, there are distinct benefits to the process. The process can be CSS-driven, with a task group of DOT staff representing a wide range of expertise and agency functions coming together to collaborate on the development of the training, thereby strengthening their understanding of CSS and encouraging their roles as champions of CSS within

their agency. The process can also allow DOT senior managers to preview and input their insights into the development of the training, thereby instilling buy-in from these managers to the training objectives and building their support to establish expectations of the skills taught and lessons learned through the training. Following are two examples of this approach:

- Maryland SHA put on a two day workshop for 300+ people statewide to develop the basic ideas for a CSS implementation plan. A consultant assisted by mentoring an interdisciplinary group of 12-15 in a management development class to put this workshop together. See an extended summary and Maryland SHA's website for more information on this process.

- Tennessee DOT's Leadership Group appointed a CSS Training Task Force, chaired by a member of the Leadership Group, and gave this group the charge to develop the 2-day course. The task force was an interdisciplinary group of staff representing a full range of TDOT 's divisions from long range planning to maintenance. TDOT's CSS implementation consulting team, one a member of a local transportation planning and engineering firm who is an experienced CSS project manager, the other a national CSS expert who is an experienced CSS trainer, mentored the Task Force as they developed the course. Click here for more information about TDOT's process.

Train your staff to become effective trainers

If your state DOT has elected to offer its own training courses, the staff who are conducting training need to be knowledgeable about the material and have some experience in teaching in order to be most effective. Several interviewees mentioned specifically the importance of having experienced instructors as one aspect of effective training, as discussed in Section 1.4. Learning how to be a more effective instructor may also benefit the overall Training Program as it may improve the quality of course materials. Two classes offered by National Highway Institute can provide such training to state DOT's:

- **Instructor Development Course** - The 3.5-day class is geared to instructors who anticipate teaching from a complete set of training materials (instructor manuals, participant workbooks, and visual aids) developed by training professionals. This Instructor Development Course will provide new and experienced instructors the knowledge and skills to deliver more effective training. NHI Course #420018.

- **Developing High-Impact Training** - This web-based course consists of six Web conferences and several self-directed pre-session assignments for a total of 6.5 hours. This course focuses on proven Instructional Systems Design (ISD) principles that help training designers develop meaningful and effective training content. NHI Course #420046.

Classes can physically be offered in several different ways, each of which has its own advantages and disadvantages. Some methods can be more appropriate for certain topics or groups of attendees than others, so they should all be considered:

- **Classroom.** This method offers face-to-face interaction that allows for group exercises and other forms of peer-to-peer learning in addition to the class material presented.
- **Workshop**. Sometimes considered separately from classroom training, a workshop often implies a more interactive session with little or no lecture portion. It can also include field trips to provide additional learning opportunities. Provides similar peer-to-peer exchange opportunities as classroom training.
- **Distance Learning.** Some of the Specialized Skills courses, in particular, are available online or through a distance learning format, which may make them less intensive in terms of staff time and budget. Depending on how they are set up, these classes may offer a more lasting educational experience by providing materials that participants can return to more than once if needed, as they encounter challenges on the job. There are now several different distance learning options available from third parties:
    - **Instructor-led online class**. These classes have scheduled times over a series of weeks where participants listen to an instructor over a phone line and are led through materials on screen. Participants can interact and ask questions via an online chat.
    - **Webinar.** Similar to an instructor-led class, but typically shorter. One or more sessions on very specific topics.
    - **Self-paced classes**. These materials are simply distributed (through a website or mailed on a CD-ROM) and participants walk through the lessons at their own pace. No instructor is involved although in some offer responses to participant questions via email.

3.3 Establish a timeline/prioritization

After determining the classes and staff that need to be trained, a schedule should be created that reflects the priorities and budgetary realities of the DOT. This schedule could also function as an action plan to move forward with the CSS training program creation, showing specific actions that staff members need to take in order to develop the program. An example of how a state DOT has created such a schedule is New York. A similar example of a graphic that pulls together a CSS training program, though without a schedule attached, is Minnesota.

4. Awareness Education Training

4.1 What is an awareness class?

CSS Awareness Training is one hour to half a day in length and can involve as many as 100 to 200 participants in a session. It is intended to be a quick introduction to the concepts of CSS, concentrating on the Remembering and Understanding levels of learning, without delving into application or analysis (see Figure D). It generally covers the definition, principles, qualities and outcomes of CSS, benefits of CSS and how CSS fits into decision-making in all phases of project delivery.

In addition, an awareness class can be an opportunity for DOT leadership to communicate their commitment to integrating CSS into DOT policies and procedures. The importance of the senior leadership role in motivating staff to implement CSS is discussed further in Sections 2.1 and 2.4.

4.2 What are the benefits of an awareness class?

CSS Awareness Training:

- provides a relatively efficient means for a Commissioner or Secretary, or senior manager such as the Chief Engineer, to speak directly to staff to communicate senior management's commitment to CSS;
- provides the opportunity to:
    - reach quickly a large number of staff, ensuring a consistency of message;
    - explain what senior managers believe that CSS is and what it is not (to dispel myths about CSS);
    - "roll out" a CSS policy or program and explain the expectations of executive leadership;
    - explain senior managers' views of how developing projects and programs to reflect CSS can benefit the DOT and its customers;
    - cite examples of current or completed projects within the state that utilize CSS principles and qualities to show that this way of doing business is not completely new;
    - explain how the CSS approach affects decision-making and how it impacts the project development process;
    - encourage adoption by all staff of the CSS mindset;
    - explain that the CSS philosophy affects the work of every staff member and provide examples to demonstrate this in functions from long range planning to operations and maintenance;
    - identify physical and human resources available to staff interested in incorporating CSS into their work;
    - identify gaps in knowledge and skills related to CSS that can be addressed by additional CSS training.

4.3 Who needs to attend an awareness class?

Awareness classes are useful for each group of DOT employees, including executives, managers, supervisors and staff (Figure E below) because they cover the basics of CSS that everyone needs to understand (Remembering and Understanding levels of learning, see Figure D and Chapter 2). They can be especially effective in reaching executives, who typically do not have the time to devote to more intensive forms of training. For other groups of employees, awareness classes may serve as the basis for additional, more in-depth training. By having all groups participate in the same awareness classes, a state DOT can ensure that staff throughout the organization have a consistent understanding and basis for implementing CSS in their work.

An awareness class can benefit staff from all functional areas, even those who will not be applying CSS directly. Even staff who are not responsible for implementing CSS principles on a day to day basis (i.e. human resources, accounting, etc.) can benefit from awareness of it, to better understand its role in the delivery of projects and plans. When forming rosters for awareness sessions, it is important to ensure that there is a mix of staff from different groups and different functional areas in each session. Participants in each session benefit from hearing from the experiences and questions of others.

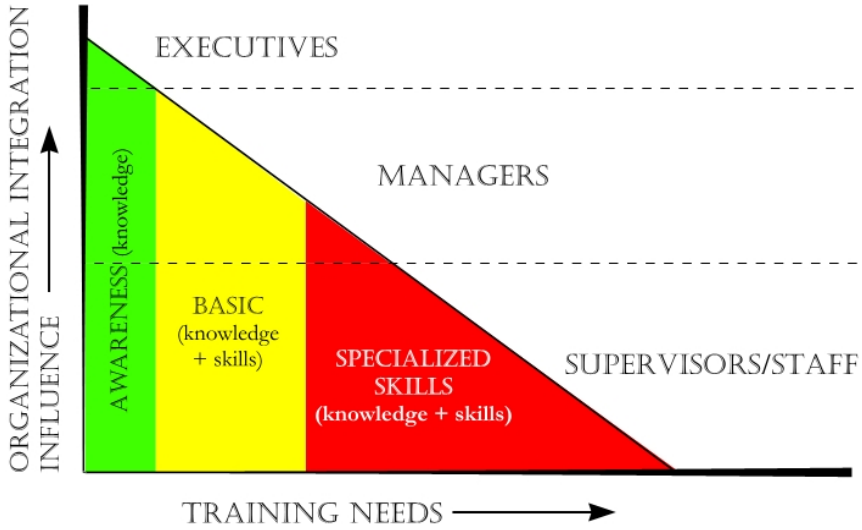

Figure E. CSS Educational Needs by Organizational Role

4.4 What might be included in an awareness class curriculum?

Through the research and interview process during the preparation of this Guide, a table of existing awareness classes was compiled to provide examples to state DOTs interested in developing or improving their own CSS awareness training. Click here to access the Existing Awareness CSS Classes table.

The information on existing classes illustrates how different state DOTs have used awareness training for purposes tailored to the needs of the DOT staff. Many have rolled out awareness training in a systematic manner, reaching out statewide, while others have crafted tailored classes for specific groups. Any agency or organization should first begin the development of a class by

establishing specific learning goals and objectives that reflect the agency wide strategic plan (mission, vision, goals) and business approach (see Chapter 3).

The following concepts are generally covered to some extent in most awareness classes:

- CSS definition, principles, qualities and outcomes
- Benefits of implementing CSS
- Decision-making processes throughout all phases of project delivery

Additional topics may include:

- The history of CSS
- National CSS initiatives
- State DOT CSS policy
- Case studies of CSS applications
- Group exercises

The specific examples used during awareness training should ideally be local to the state or region where the class is held, and some state DOTs have found success in adapting slightly the content of awareness classes to the audience of each session. Following are a few effective learning/teaching techniques for awareness classes:

- Tennessee DOT recruited senior executives including the Chief Engineer and Chief of Environment and Planning to assist in teaching part of their awareness class. Having the active participation of leadership, rather than simply reading a statement or a policy, proved especially effective for TDOT. TDOT also actively sought to show CSS examples that had already taken place in Tennessee and identify class participants who had taken part in those projects. Those participants were able to add to the discussion of the project and were recognized for their efforts. (See Agenda and Slides from this class)

- Awareness classes in Minnesota and Colorado included group role-playing exercises to more actively engage participants. While these exercises are more common in the 2 to 3 day CSS basic classes, these states' class exercises illustrate how abbreviated versions can be incorporated into a shorter awareness class.

5. Basic Education Training

5.1 What is a basic class?

A CSS basic class is two to three days in length and typically involves class sizes of 25 to 40 people. It is intended to build on the CSS concepts introduced in an awareness class by increasing the breadth and depth of CSS topics covered. Basic courses address the application of CSS to DOT projects and begin to analyze CSS implementation beyond the Remembering and Understanding levels of learning (see Figure D).

Basic training can build upon a previous awareness class, or, if awareness level training has not been provided, a basic class can also address the CSS definition, principles, qualities and outcomes as well as the benefits of CSS organizational and project integration.

CSS basic training, as its name suggests, provides the foundation for applying CSS in the workplace as well as for specialized skills training. Specialized skills training, described in Chapter 6, builds upon basic training to achieve in-depth skills specific to the functional area of each employee.

5.2 What are the benefits of a basic class?

CSS basic training can:

- Encourage collaborative efforts and teambuilding internally and with external stakeholders;
- Help break down a compartmentalized mentality about job responsibilities;
- Encourage a positive focus on customer needs and aspirations regarding transportation;
- Build partnerships and understanding among diverse stakeholders (DOT staff, consultants, resource agency staff, advocacy organizations, public officials, citizens) in a more open and relaxed environment than when project pressures loom;
- Begin a dialogue among diverse participants to encourage mutually supportive and coordinated multimodal transportation and land-use decisions;
- Encourage flexible thinking about job responsibilities and creativity in developing the best solutions to identified problems;
- Work towards achieving flexibility in identifying design solutions that fit their context;
- Motivate DOT staff and other stakeholders to first understand what CSS is and then to alter their behavior to achieve CSS principles, qualities and outcomes;
- Explain and then demonstrate consensus-building skills through a series of class exercises;
- Enable participants to understand how the CSS philosophy of doing business applies to all staff responsibilities and to projects of all types and scales;
- Enable participants to understand and then practice new skills valuable in CSS including consensus building, respectful listening, and basic facilitation;
- Enable participants to understand the multiple dimensions of project context and to learn where to access tools to assist with identifying a project’s context;

- Foster a basic understanding of the value, variety and appropriate choice of visual communications tools;
- Foster a better understanding of the effective roles that discipline-specific professionals can play on project teams;
- Facilitate implementation of CSS by transportation agency staff and their partners through developing individual action plans;
- Foster understanding of how the CSS approach affects all phases of project delivery from long range planning through to construction, operations and maintenance;
- Foster understanding of clearly defined decision-making processes for project phases and agency programs consistent with the CSS philosophy.

5.3 Who needs to attend a basic class?

Basic classes are most useful for managers, supervisors and staff (Figure E below) because they cover many CSS topics and are oriented toward CSS practitioners (Remembering, Understanding, Application and Analysis levels of learning, see Figure D and Chapter 2). Although executives typically do not have time to attend a two to three day class, and do not need to have a practitioner level of skills, they should have input into developing the course learning goals and objectives, be recruited to evaluate pilot classes, and demonstrate their support for the messages being conveyed in the class.

A basic class can benefit staff from all functional areas, particularly those who will be expected to implement CSS concepts in their work. Similar to awareness training, it is important to ensure that there is a mix of staff from different groups and different functional areas in each session. Participants in each session benefit from being exposed to different perspectives and values. It also provides an atmosphere of learning that reflects real world interactions thereby facilitating practice of communication skills.

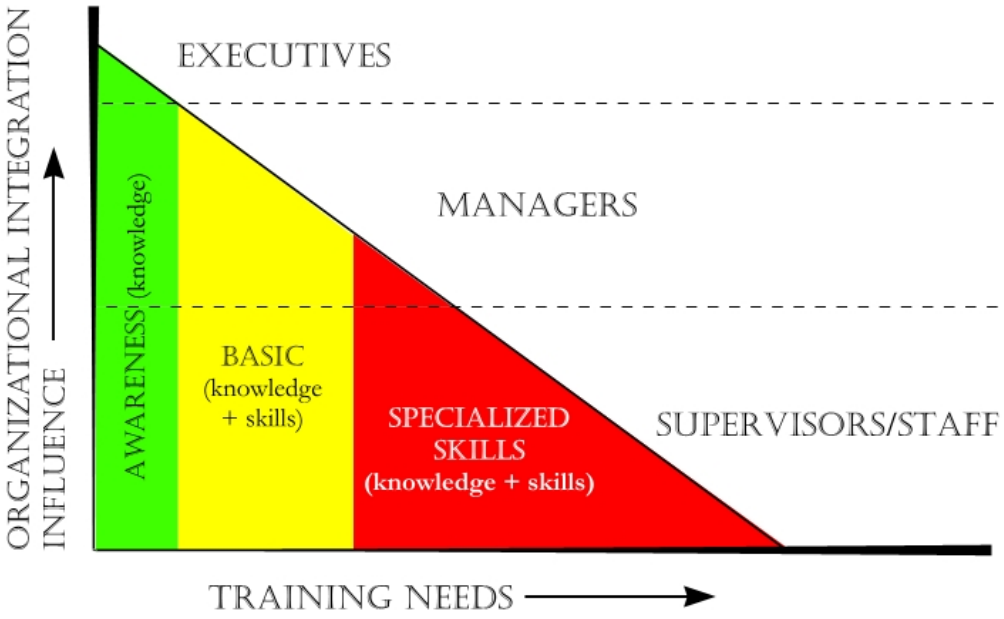

Figure E. CSS Educational Needs by Organizational Role

5.4 What might be included in a basic class curriculum?

Through the research and interview process during the preparation of this Guide, a table of existing basic classes was compiled to provide examples to state DOTs interested in developing or improving their own CSS basic training. Click here to access the Existing Basic CSS Classes table.

The information on existing classes illustrates how different state DOTs have used basic training for purposes tailored to the needs of the DOT staff. Many have rolled out basic training in a systematic manner, reaching out statewide, while others have crafted tailored classes for specific groups. Any agency or organization should first begin the development of a class by establishing specific learning goals and objectives that reflect the agency wide strategic plan (mission, vision, goals) and business approach (see Chapter 3).

The curriculum for a training class is ideally adapted to each state DOT, and to some extent to the audience for each different session. The following concepts are generally covered to some extent in most basic classes:

- CSS Definition, Principles, Qualities and Outcomes
- Benefits of Implementing CSS
- Decision-making Processes Throughout All Phases of Project Delivery
- Flexible Design
- Stakeholder Involvement
- Interdisciplinary Teams

- Comprehensive Understanding of Contexts
- Achieving Consensus
- Individual Action Plans

Additional topics may include:

- The history of CSS
- National CSS initiatives
- State DOT CSS policy
- Case studies of CSS applications
- Group exercises

6. Specialized Skills Training

6.1 What is a specialized skills class?

Specialized skills classes are a broad set of courses where participants can gain further depth on CSS-related topics. Unlike an awareness or basic class, where there would be essentially one class taught in each state, a single state may offer several different specialized skills classes to meet the needs of different groups of employees. Although the courses may or may not directly refer to CSS, they offer in-depth knowledge and skills that are necessary for CSS implementation. Unlike a basic class, which covers many CSS-related topics in a relatively brief manner, a specialized skills class takes one or a few topics and provides very detailed knowledge and skills. These very detailed knowledge and skills are what effectively arms the DOT staff to apply CSS principles, qualities and outcomes in all phases of project delivery. Participants can then reach the highest levels of learning, Synthesis and Evaluation (Figure D). Classes range from one to three days, and may span over weeks or months.

Many specialized skills courses are existing packaged courses that do not need customization to be effective. They can be provided by:

- State DOTs
- Third parties (i.e., consultants, FHWA Resource Center, National Highway Institute or other organizations) hosted at a site within the state. Utilizing third party courses can potentially reduce the amount of preparation and coordination necessary on the part of the state DOT training staff
- Third parties at a site outside the state
- Third parties utilizing distance learning, either via the internet with webinars or web-based instructor-led courses, or CD-ROMs that walk participants through course materials

CSS-related specialized skills classes address the following categories:

- Decisionmaking processes
- Design flexibility
- Stakeholder involvement
- Interdisciplinary teams
- Understanding context
- Communication skills
- Human and natural environment compatibility

6.2 What are the benefits of a specialized skills class?

Specialized skills courses can:

- Expand upon the CSS concepts introduced in awareness and basic courses by providing in-depth knowledge and skills to specific groups of staff to implement CSS

concepts. Each phase of project delivery is unique and requires the proper alignment of knowledge and skills to roles and responsibilities to implement CSS;
- Address the unique educational needs of different functional areas of project delivery (long range planning, environmental review, design, construction and maintenance);
- Provide knowledge and skills strategically to employees who are implementing CSS – the detailed knowledge and skills most needed, for the employees who need them; and
- Allow employees to reach the highest levels of CSS learning so that they can analyze situations, make judgments, and develop original ideas.

6.3 Who needs to attend a specialized skills class?

Employees from all functional areas can benefit from specialized skills courses that are focused on issues presented in their work (Figure E below). Supervisors and staff would see the most benefit as they are involved in the day-to-day operations of the agency that require these types of skills. But managers may also benefit from a class that is directed at their functional area, so that they can better understand the challenges facing their employees and the tools available to address them. A more detailed explanation of which functional areas would benefit most from which types of classes is covered in the next section.

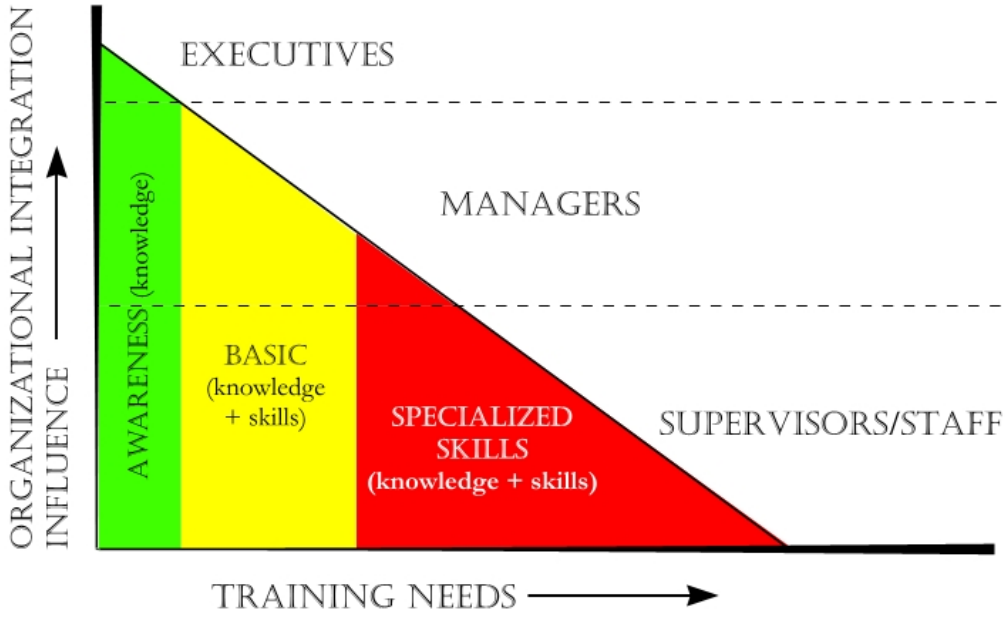

Figure E. CSS Educational Needs by Organizational Role

6.4 What might be included in a specialized skills class curriculum?

Through the research and interview process during the preparation of this Guide, a table of existing specialized skills classes was compiled to provide examples to state DOTs interested in expanding CSS-related skills. The courses are divided into three distinct groups:

- Courses offered previously by state DOTs, which may be useful as examples to other state DOTs developing their own courses
- Courses offered by FHWA Resource Center staff, which may be useful as examples or which may be presented to host DOTs upon request
- Other commercially-available third party courses, which are generally offered for staff to attend at a predetermined course location or to host by a state DOT upon request

Click here to access the Existing Specialized Skills CSS Classes table.

FHWA's Environmental Competency Building (ECB) Program

The mission of the ECB program is to collaboratively identify, develop, and promote effective strategies and resources that will cultivate and enhance competencies of professionals to deliver environmentally sustainable transportation programs.

FHWA, in collaboration with a Steering Committee of transportation and environmental stakeholders, has developed the Competency Navigator to assist professionals in identifying the key environmental and technical topic areas associated with the delivery of environmentally sustainable transportation programs. The Competency Navigator also offers a variety of resources available to enhance understanding in each competency area.

Similar to the Training Guide, the Competency Navigator provides information about courses that are available to state DOT personnel to increase their knowledge and skills in the area of environmental review and analysis. Every effort has been made to include relevant courses listed in the Competency Navigator on this website, but it may still be useful to visit the ECB website for classes for environmental professionals.

7. Educational Support Network

7.1 What is an Educational Support Network?

An Educational Support Network, or Professional Capacity Building Program, is a broad term for a range of training (including non-classroom) methods for building knowledge and skills. During interviews with state DOT and FHWA division staff, interviewees indicated that the classroom training/workshop method of acquiring CSS knowledge and skills was one of the most effective methods. As a result of those comments, the Training Guide focuses primarily on classroom methods. Interviewees also noted, however, the important role of complementary non-classroom methods and techniques in reinforcing CSS concepts learned in the classroom and addressing the practical challenges of applying CSS in the workplace. This chapter provides information on some of those complementary non-classroom methods.

The appropriateness and effectiveness of each of the following non-classroom methods for a particular state DOT will vary based on the state's experience with CSS and CSS training to date, as well as other factors. For example, in states just beginning to integrate CSS, mentoring may have little value since there are fewer experienced "CSS Champions" to act as mentors. Moreover, the functional area of staff involved, or the topic that needs to be addressed, can help determine the most effective methods. Some staff, such as design engineers, may be more effectively reached by methods that include hands-on exercises, while issues such as ensuring effective public involvement using innovative techniques may be better addressed by the DOT public involvement specialist providing on-call technical assistance to other staff that may not have full time responsibilities for conducting public involvement activities.

Overall, having a good understanding of the goals of the DOT's overall training program is critical to the effectiveness of selected techniques. This list is intended to provide a menu of options for states to consider in supplementing their CSS training initiatives.

7.2 What elements might be included in an Educational Support Network?

Manuals and Guidance

Manuals and Guidance include specific written information about technical topics, processes and/or procedures, formally adopted by a governing agency. While simply publishing a manual or guidance describing CSS policies and procedures would not guarantee implementation, or replace instructor-led forms of education, they are nonetheless a crucial part of a CSS program. Manuals and guidance provide the formal documentation for the CSS process and are especially important because decision-making criteria may change depending on context and the specific phase of project delivery. Some engineers, particularly those who have worked for years by relying on formal standards and guidelines like the Greenbook (A Policy on Geometric Design of Highways and Streets, 5th Edition), seek formality in the procedures they follow.

Manuals and guidance that describe the CSS process and procedures are an essential complement to other CSS training or educational components. Following is a list of selected manuals and

guidance that are related to CSS or include CSS elements, divided into two general categories: General or nationwide manuals and guidance, and location-specific manuals and guidance.

General/Nationwide Manuals and Guidance:

Federal Highway Administration, Flexibility in Highway Design, 1997.
This seminal document espouses the principles of Context Sensitive Solutions, although not explicitly using that term, for both transportation practitioners and citizens. It provides strategies for planning and designing highway projects that respect and preserve both natural and human environments, as well as case studies of best practices.

American Association of State Highway Officials, A Guide for Achieving Flexibility in Highway Design, 2004.
The AASHTO guidebook is a practical resource for implementing the principles of the FHWA Flexibility in Highway Design document. This publication includes guidance on planning and constructing context sensitive roadways throughout the project development process. It is largely targeted to highway design professionals as a supplement to AASHTO's A Policy on Geometric Design of Highways and Streets (the "Green Book").

American Association of State Highway Officials, Best Practices in CSS Awards: 2006 and 2005.
A diverse expert review panel selected five winners in four categories in 2006: best small urban project, best large urban project, best program, and best organizational integration. Each CSS award provides information about what makes a project exemplary and what lessons were learned in the process, which may be instructive to other DOT staff.

Transportation Research Board, NCHRP Report 480: A Guide To Best Practices For Achieving Context Sensitive Solutions, 2002.
This publication highlights some best practices of how transportation agencies are incorporating context sensitivity into their project work. The topics included in this report range from multi-disciplinary decision making to respecting community and environmental needs to the organizational needs of agencies adopting the CSS approach.

TRB, Transportation Research Circular E-C067: Context-Sensitive Design Around the Country: Some Examples, 2004.
TRB compiled in this document examples of projects throughout the country that have encompassed CSD principles and have been designed and constructed to fit the specific context and needs of the project.

TRB, NCHRP Document 69: Performance Measures for Context Sensitive Solutions – A Guidebook for State DOTs, 2004.
This document provides guidance on how to develop performance measurement programs for DOTs that are working to integrate the principles of CSS into their project development processes. Information is provided for assessing success both at the project-level and organization-wide.

TRB, NCHRP Project 25-25 (04): Environmental Stewardship Practices, Procedures and Policies for Highway Construction and Maintenance, 2004.
Highway design and management practices that protect and enhance natural ecosystems are an integral element of CSS. Many DOTs employ a variety of strategies to accomplish this goal. This compendium of best practices attempts to further standardize these practices among the transportation community to maximize efficiency and environmental benefits.

TRB, NCHRP Synthesis 373: Multi-Disciplinary Teams in Context-Sensitive Solutions, 2007.
This collection of research on the practice of using multi-disciplinary teams for achieving CSS documents different approaches currently being deployed and makes recommendations for best practices.

TRB, NCHRP Report 612: Safe and Aesthetic Design of Urban Roadside Treatments, 2008.
Communities have requested that highways be redesigned using context sensitive solutions that enhance the appearance and, in some cases, the function of the highway. Many of the context sensitive solutions involve introducing roadside treatments such as trees, sculptures, and signs that are intended to slow or "calm" traffic to enhance safety. However, many of these features are considered fixed objects and will often be located within the design clear zone. It is crucial that the impacts of these designs be understood so that decisions can be based on facts. There is also a need to identify designs that have performed acceptably and a need to develop new design guidelines that enhance the roadside environment while being forgiving to errant vehicles.

FHWA, Public Involvement Techniques for Transportation Decision-Making, 1996.
This report gives transportation agencies access to a wide variety of tools to involve the public in developing specific plans, programs, or projects through their public involvement processes.

FHWA, Community Impact Assessment: A Quick Reference for Transportation, 1996.
This FHWA guide is a primer for transportation professionals and analysts who assess the impacts of proposed transportation actions on communities. It outlines the community impact assessment process, highlights critical areas that must be examined, identifies basic tools and information sources, and stimulates the thought process related to individual projects.

FHWA, Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects.
Sometimes the development of infrastructure facilities can negatively impact natural habitat and ecosystems. Although techniques have been developed to better avoid, minimize, and mitigate these impacts, as well as the impacts of past infrastructure projects, the avoidance, minimization, and mitigation efforts used may not always provide the greatest environmental benefit, or may do very little to promote ecosystem sustainability. This document addresses this issue and promotes an ecosystem approach to infrastructure planning.

FHWA, Integration of Context Sensitive Solutions in the Transportation Planning Process, 2007.
The goal of this project is to investigate emerging successful practices, case studies, and policy guidance that can promote integrating CSS principles in the transportation planning process. This report provides documentation of a survey of current practices in planning agencies and the development of the toolkit materials. The report concludes with a summary of findings, recommendations for implementation, and identifies several areas needing future study.

FHWA, Planning for Transportation in Rural Areas, 2001.
The purpose of this document is to provide a resource to rural planners, city and county engineers, stakeholders, local officials, and other decision-makers involved with developing rural transportation plans.

FHWA, "Accommodating Bicycle and Pedestrian Travel: A Recommended Approach."
This policy statement by the USDOT offers design guidance for integrating bicycling and walking into transportation infrastructure. USDOT hopes that public agencies, professional associations, advocacy groups, and others will adopt this approach as a way of committing themselves to integrating bicycling and walking into the transportation mainstream.

Institute of Transportation Engineers, An ITE Proposed Recommended Practice: Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, 2006.
ITE's handbook provides guidance for transportation improvement projects dealing with arterials and collectors in urbanized areas. The document provides guidance for balancing different stakeholder needs and roadway design parameters that encourage walking and biking as viable and safe modes of transportation.

Department of Transport (UK), The Manual for Streets: Evidence and Research, 2007.
This document is the technical appendix to Manual for Streets. These documents provide geometric street design guidance for low-traffic residential streets, and are also applicable to pedestrian streets and other low-traffic roadways.

Environmental Protection Agency, Tools for Public Involvement.
This website includes several manuals related to public involvement, EPA programs and regional tools, an extensive list of additional public involvement references and tools, and specific public involvement techniques.

Location-specific Manuals and Guidance:

Atlanta Regional Commission, Context Sensitive Street Design, 2001.
This publication provides process strategies, as well as development and street design ideas, for achieving CSS on community streets. Guidance is offered for enhancing community engagement, walking, biking, and transit viability, among other outcomes.

California Department of Transportation, Main Streets: Flexibility in Design & Operations, 2005.
In this document, Caltrans identifies CSS strategies that can be used when a Main Street is also a state highway to assist communities and Caltrans in balancing community values with transportation concerns for safe and efficient operations for travelers, pedestrians, bicyclists, transit users, and highway workers.

Charlotte Department of Transportation, Urban Street Design Guidelines, 2007. The Urban Street Design Guidelines (USDG) are intended to create "complete" streets--streets that provide

capacity and mobility for motorists, while also being safer and more comfortable for pedestrians, cyclists, and neighborhood residents.

Chatham County – Savannah Metropolitan Planning Commission, Context Sensitive Design Manual, 2007.
This manual recommends design guidelines and a design process that will incorporate desired transportation amenities into road construction projects. Additionally, it addresses the layout of the roadway network and land use, which relate to how the pieces of a community fit together.

Colorado DOT, Environmental Stewardship Guide, 2005.
The guidebook describes CDOT's commitment to environmental stewardship and the process by which social, economic, environmental, and engineering considerations are integrated into transportation decision-making, including policy development, systems and project development, and the design, construction, maintenance and operations of their highway system.

Delaware DOT, Traffic Calming Design Manual, 2000.
This supplement to the Delaware DOT Road Design Manual provides transportation planners and engineers with general guidance regarding the appropriate use, design, and signing and marking of traffic calming measures. Local officials, developers, community associations or other interested parties can also learn from this document what traffic calming is and how it can be applied in Delaware.

District DOT (Washington, DC), Context Sensitive Solutions Guidelines, 2006.
DDOT prepared this document to explain its approach to Context Sensitive Solutions and to provide guidelines for achieving excellence in planning and design of transportation projects. These guidelines are intended to ensure the implementation of the CSS approach to every DDOT design project. These CSS guidelines apply to all new design projects by DDOT (both in-house and on contract) for all modes of travel.

Florida DOT, Plans Preparation Manual, 2008.
The FDOT design manual provides guidance for all state highway projects, and Chapter 1 states that CSS should be considered in all projects. Additionally, projects in which it is essential to protect natural resources and the cultural and social values of the community should incorporate "Transportation Design for Livable Communities" elements (Chpater 21).

Florida DOT, Project Manager's Handbook, 2008.
Chapter 9 of this handbook for highway project managers addresses strategies for advocating and incorporating the principles of CSS.

Florida DOT, Public Involvement Handbook, 2003.
The handbook provides practitioners with techniques and methods to encourage meaningful and constructive public participation in the development of transportation projects.

Florida DOT, Sociocultural Effects Handbook, 2005.

This guide describes the process of analyzing the potential sociocultural effects of a transportation project or activity on a community, assessing the degree of effect and whether mitigation and/or avoidance measures are warranted.

Georgia DOT, Context Sensitive Design Online Manual.
The online manual provides the latest research and development information regarding CSD/CSS best practices in Georgia and throughout the country. It sets out policy guidelines and procedures for communication strategies, design flexibility, environmental sensitivity, and stakeholder involvement, as well as project examples in Georgia and in other states that demonstrate good CSS practices.

Idaho Transportation Department, Context Sensitive Solutions Guide, 2006.
ITD developed this guide to explain its environmental ethic and its approach to Context Sensitive Solutions, which should permeate all aspects of transportation including policy development, systems planning and project development, and the design, construction, maintenance and operations of the transportation system. This document is designed to educate and assist both internal and external users to better understand the considerations given to the environment through the use of Context Sensitive Solutions.

Illinois DOT, Bureau of Design and Environment Manual, 2002.
Consistent with the principles of CSS, the IDOT design manual encourages highway designers to develop roadway designs that meet the Department's operational and safety requirements while preserving the aesthetic, historic, or cultural resources of an area. It recognizes that designers must exercise good judgment on individual projects and, frequently, they must be innovative in their approach to roadway design.

Maryland State Highway Administration, When Main Street is a State Highway: Blending Function, Beauty and Identity, 2003.
Intended for stakeholders and citizens, this handbook presents ways of working cooperatively with MSHA on highway improvements that reflect community goals. It includes guidance on both participatory planning processes and roadway design elements that enhance the safety and comfort of pedestrians and cyclists.

Massachusetts Highway Department, Project Development and Design Guide, 2006.
MassHighway's guidebook provides highway designers and decision-makers with a framework for incorporating state-of-the-art context sensitive design and multi-modal elements into transportation improvement projects, as well as promoting a clear project development process.

Michigan DOT, "Flexibility in Michigan DOT Design Standards," 2005.
This document outlines how to achieve design flexibility that is conducive to context sensitive solutions, both within existing design guidelines and through the design exception process.

New Jersey DOT, Flexible Design of New Jersey's Main Streets, 1998.
Prepared in conjunction with Rutgers University, this publication proposes a series of policy and practice changes that would add flexibility and context sensitivity to DOT's design process for Main Streets. Proposals span the highway design process, from planning to final design. Modest

changes in geometric standards are also proposed for Main Streets to enhance flexibility and context sensitivity.

New Jersey and Pennsylvania DOTs, Smart Transportation Guidebook, 2008.
The goal of the Guidebook is to integrate the planning and design of streets and highways in order to foster development of sustainable and livable communities. It is equally applicability to rural, suburban and urban areas. Smart transportation incorporates financial constraints, community needs and aspirations, land use, and environmental constraints during project development, resulting in effective use of resources and lasting community assets.

New York State DOT, Project Development Manual.
This manual guides the project development process of NYSDOT and incorporates the principles of CSS.

New York State DOT, "NYSDOT Engineering Instruction 01-020: Context Sensitive Solutions," 2001.
This DOT directive amends the Department's Environmental Policy with respect to Context Sensitive Solutions, so that projects developed by the agency reflect the principles of CSS and incorporate Public Involvement Plans.

North Carolina DOT, "NCDOT Context Sensitive Solutions: Goals and Working Guidelines," 2003.
This policy paper provides a framework for implementing the content of NCDOT's Context Sensitive Solutions training, with the ultimate goal of creating a transportation system that provides safe and effective transportation while preserving and enhancing where possible the natural and human environment.

North Carolina DOT, Best Management Practices for Construction and Maintenance Activities, 2003.
Recognizing that much of North Carolina's economy is supported by aquatic trades and tourism and many of North Carolina's citizens enjoy activities on or around the numerous streams, lakes and estuaries of the state, this manual is designed for employees and contractors to construct, and maintain the NCDOT roadway systems while minimizing adverse impacts on the water resources of the State.

Ohio DOT, Aesthetic Design Guidelines.
Believing that transportation projects can be attractive, as well as safe and efficient, ODOT created these guidelines for use by the professionals who plan, design and construct Ohio's transportation facilities. The guidelines include concepts for the design of physical features, and they describe a process that integrates various viewpoints to produce a safe, sensible and cost-effective system.

Oregon DOT, Main Street…when a highway runs through it: A Handbook for Oregon Communities, 1999.

This handbook was created to assist communities working together to improve their Main Street, which also serves as a state highway. These roadway's face special challenges, and this publication provides both design and process strategies for quality outcomes.

Washington DOT, Building Projects that Build Communities, 2003.
This guidebook provides a framework for effective community-based design and collaborative decision-making to produce better transportation projects. Project teams are encouraged to use the tools described in this document to help them set the stage for long-term success and to implement the planning, design, and construction of projects.

Washington DOT, Understanding Flexibility in Transportation Design, 2005.
WSDOT produced this document to help those involved in transportation projects understand the concepts related to Context Sensitive Design and community-based project development processes. This tool is intended to facilitate informed decision-making at decision points throughout the project lifecycle.

Wisconsin DOT, Facilities Development Manual.
WisDOT's transportation projects manual describes the agency's approach to "Community Sensitive Design," (Chapter 11) in which a variety of design, construction and safety standards must be met, along with environmental considerations, to integrate projects into the community and natural environment. The manual explains the department's beliefs and approach to design standards and aesthetic, community-sensitive design during project development.

Peer Exchanges

A peer exchange is an exchange of information among people working in different organizations who perceive themselves to be of similar rank and responsibilities in their jobs. The purpose of such an exchange is to help staff learn from others' experiences, both from their successes at implementing CSS principles and from the lessons they have learned. The result should be a shorter learning curve for CSS integration within an agency. Peer exchanges can be between personnel from different states or within the same state DOT (especially those with decentralized divisions).

Examples of state-to-state peer exchanges

- FHWA facilitated a peer exchange between North Dakota and Michigan DOT in 2007. The peer exchange was organized at NDDOT's request to have an exchange with one other state that would assist them in their initial start up of CSS integration activities.

- FHWA assisted in organizing a peer exchange in September 2007 to assist Indiana DOT by inviting representatives from four other states and one CSS consultant to participate in an exchange of information over one and a half days. IDOT hired a consultant to organize logistics, maintain a record of the exchange as it proceeded and to provide follow on services. IDOT's CSS Steering Group met with their peers from other states for a day and on the second day invited several mid-level an upper level managers for a briefing and further discussion of the initial day's findings.

- Staff engaged in CSS from New Hampshire DOT and Tennessee DOT met twice in 2007 via FHWA's teleconferencing facilities in their division offices, for two hours each time. Background materials were distributed in advance to make the dialogue more productive. The first exchange focused on CSS training: TDOT shared information on lessons learned in producing their CSS Awareness Course (presented to about 700 staff); NHDOT shared their experience in developing and conducting their 2-day CSS Basic Training Course. The second exchange focused on the project delivery process, with each state sharing information about how CSS concepts were impacting their project delivery process and how pilot projects had adopted CSS principles and techniques. A final peer exchange session had been planned to focus on each state's experience with developing and implementing a CSS Action Plan; this session was postponed since NHDOT was not ready to develop its Action Plan. Click here for an agenda.

- The 2006 Baltimore CSS peer exchange was sponsored by the Center for Environmental Excellence by AASHTO in conjunction with the AASHTO CSS Task Force and the Federal Highway Administration. Over 260 participants from 46 states, the District of Columbia, Puerto Rico and Nova Scotia participated in peer exchanges, discussing the issues and challenges to implementation. During concurrent breakout sessions, sixteen projects were presented to highlight the success of CSS. Participants had the opportunity to meet with other state representatives to initiate state action plans to further implement CSS within their state and agency. Click here to acces the materials.

- FHWA facilitated a peer exchange between North Carolina DOT (NCDOT) and Tennessee DOT (TDOT) in 2003 through the Transportation Planning Capacity Building (TPCB) Program, which is jointly sponsored by FHWA and the Federal Transit Administration (FTA). The NCDOT Office of Environmental Quality hosted a two and half day workshop for TDOT in order to help illuminate recent and ongoing developments with NCDOT's planning, environmental, and streamlining processes and organizational operations. Click for a summary of the exchange.

- In addition, the Transportation Planning Capacity Building (TPCB) Program sponsored by FHWA and FTA has organized two peer exchanges on effective public involvement in transportation planning and project delivery. A peer exchange on Techniques for Public Involvement was held in spring 2002 between several MPOs in Michigan and Florida. Another peer exchange, Implementing Effective Public Involvement Procedures throughout a Multi-Disciplinary Agency, was held in fall 2004 with representatives of eight MPOs.

Example of an Internal Peer Exchange

New Hampshire DOT offered its 2-day CSS Basic Training class on a bi-monthly basis for about 18 months from late 2005 to early 2007. About eight months into this period, NHDOT asked the CSS training consultant engaged in public involvement and consensus building to design a peer exchange for NHDOT's project managers and senior managers in the preliminary and final design divisions. Click here for the agenda. Individuals from NH's rural planning organizations

were invited as well as one consultant engaged in two of NHDOT's pilot projects using CSS principles. Generally 12 to 18 individuals attended each session.

The CSS training consultant talked with several of those invited in advance of each meeting to determine what topics were of greatest interest to members of the group and what troublesome issues may have arisen since the previous meeting. The consultant facilitated the discussions, which lasted 3 hours for the first year and generally 2 hours thereafter. Early on, project managers discussed how applying the CSS philosophy and techniques presented in the training course to their projects was going, what had worked well, what lessons they had learned about approaches that might have been more successful, and where they had questions about how CSS concepts might impact their project process.

The format of having NHDOT staff exchange information in a non-judgmental manner and with guidance from a national expert was very successful at reinforcing on the job learning building on the CSS formal training. It provided strong support to staff that were being asked to approach their roles in new and sometimes uncomfortable ways. The discussion provided a forum to clarify and where needed redirect staff's understanding of what CSS is and how to meet CSS principles in their work.

Throughout each session, the facilitator took note of issues that might serve as the focus for future peer exchange discussions. These sessions encouraged adoption of CSS techniques that were addressed in the 2-day training course, but which staff might not have undertaken without further support. For example, in early pilot projects that incorporated CSS techniques, project managers did not develop a public involvement plan. Once the peer and mentoring sessions began, a lead project manager developed such a plan for his project and subsequently, other project managers did the same. The peer sessions reinforced the importance and value of developing such plans and provided support as staff undertook to use this unfamiliar tool.

Another topic that merited discussion included discussing what to do when applying guidelines about achieving consensus in a large project where one alternative could not achieve either consensus or the fallback guideline of a 3/4 majority recommendation called for by the group's process guidelines. Other topics included addressing successful ways to develop criteria to evaluate alternatives for projects and developing a matrix to address scaling CSS techniques to use on projects of all types and sizes.

Mentoring

Mentoring involves providing a "coach" to DOT staff transitioning to using CSS principles in order to give ongoing direction as they work to develop new skills and adopt different perspectives in their work. The coach can be another staff member with more experience with CSS, or an external consultant. Mentoring can serve many useful functions for DOT staff. It can:

- Reinforce on-the-job learning that will build on what staff have been exposed to in formal CSS training.
- Support staff through their initial efforts to use CSS approaches in their jobs.

- Provide a forum to clarify and, if needed, redirect staff's understanding of what CSS is and how they can meet CSS principles in their work.

A creative mentoring strategy was used by Utah DOT as part of their Legacy Parkway Project. The Utah DOT hired a CSS consultant to be a part of their Parkway Team and to mentor the prime consultant throughout the design build process. A separate contract was developed for the CSS consultant and included providing oversight of the design build contractor's team to ensure an objective perspective concerning CSS implementation.

Several additional methods of professional capacity building, ranked lower by interviewees than the above methods, follow:

Technical Assistance

As staff implement CSS on transportation projects, challenges and questions will inevitably arise. For example, stakeholders can be difficult to engage, the decisionmaking process can become complex, and the safety implications of particular design choices can be uncertain. To target these questions or service needs, short-term, on-demand assistance from experienced personnel could be very useful. The program could simply be in the form of one or a set of phone numbers or emails for staff to contact, which are publicized to staff in all areas of project development and delivery. This assistance may come from several sources:

- DOT staff (if persons with sufficient experience exist). The DOT can help develop the on-call CSS experts within their staff by providing additional training to key personnel so that they are prepared to provide technical assistance to others. One approach would be to accomplish this training through a "CSS Academy" as described below.
- Consultants. Similar to the mentoring approach described above, consultants can be retained to provide on-call assistance. The contract could be designed as "pay as you go", so that the state DOT pays only only for the time that the consultant actually spends providing assistance, within certain pre-established limits, requiring no up-front large allocation of budget.
- FHWA Resource Center staff. The FHWA Resource Center (http://www.fhwa.dot.gov/resourcecenter/) employs staff members who assist state DOTs in fulfilling their functions, including in applying CSS principles (or concepts). Resource Center Technical Service Teams include Construction and Project Management, Environment, Operations, Planning, and Safety and Design. These staff members are called upon to give presentations and project-related assistance across the country.
    - An example of such technical assistance was a one-day CSS briefing for the Corpus Christi MPO and TxDOT in March 2007 given by FHWA Resource Center staff (click here for agenda). The topics covered in this session were directly related to the needs of the audience.
    - FHWA also has a technical assistance project currently underway to provide consultant expert assistance to 15 state DOTs (contact K Lynn Berry for more information). For the latter project, consultants will conduct an initial phone interview with DOT and FHWA personnel, develop a technical assistance approach, and deliver technical assistance as appropriate for each state DOT.

- AASHTO Center for Environmental Excellence. AASHTO provides technical assistance through its designated Environmental Excellence Technical Experts (click here for information on requesting assistance).

Short Sessions

Short seminars on specific topics (typically 1-3 hours) typically involve an expert presenting information to inform or refresh staff on a CSS-related topic, followed by a short question and answer period. These sessions can be used to communicate new policies or techniques, stimulate a deeper understanding of a specific CSS-related topic, or highlight what local resources exist for DOT employees implementing CSS. For example, the state environmental agency might do a briefing on wildlife corridors and crossings; a consultant might present on the latest traffic calming techniques, or a state historical society could be invited to present case studies of transportation projects that were designed to respect the context of a historic main street. There are several ways in which short sessions can be employed:

- As independent meetings called for that purpose
- As part of a larger non-CSS-specific conference. An advantage of this approach is that targeted groups of people can be reached easily and with lower travel cost, since they will already be at the conference. Examples: Several conference presentations for different audiences in New York state (construction/operations/maintenance and engineers), and the Maine Gateway 1 conference
- As part of a "CSS Academy" series. Several states have employed this approach to provide ongoing training on CSS-related topics. Sessions are typically shorter than traditional training, but are conducted at regular intervals to keep staff involved and motivated. California holds a Design Senior Seminar, a Landscape Architects Academy, and a Project Engineers Academy
- As webinars. Examples: Using Design Flexibility to Achieve Context Sensitive Solutions and Integrating Transportation Planning and NEPA Decision-Making.

Informal Group Discussion

After awareness or basic training has been completed, regular follow up discussions are vital to the learning process, helping trainees to absorb and retain the CSS principles while relating them to personal their experiences and those of their colleagues. These brief (e.g. 1-hour) gatherings are a less formal form of peer exchange, generally focusing on sharing experiences. They could be held as brown bag lunches or evening meetings at monthly or quarterly intervals. As time goes on, these discussions will help staff become accustomed to using CSS techniques in their projects. A regular schedule will help raise the expectation that CSS should become a routine part of every project and build a culture of CSS within the staff.

Note-taking during these sessions is important since staff will often identify special subjects in which additional training or technical assistance is needed. In fact, it is advisable that if a DOT has a staff training coordinator, this person should attend such discussions and help set and schedule them. Another option is to begin an email discussion group or listserv, although this should only complement, not replace, the face-to-face group discussions. One example is the

CSS discussion forum maintained by CSS.org, which is available for people to pose a question to a network of staff working on CSS issues (see website).

Information Warehouse

As staff begin to implement CSS, they will be creating new methods and models that others will want to borrow, adapt and improve upon. For instance, a project manager shifting to CSS will develop new types of public involvement plans, work plans, meeting agendas, letters to stakeholders, presentations, and hundreds of other pieces of information that others will want to build from. In the case of New Hampshire DOT, project managers have kept binders and created a website of all the materials produced under the new CSS process for future reference and to help others. The ability for staff to benefit from the previous work of others reduces the time and effort to implement CSS and increases the human and social capital among the DOT staff. Information warehouses may take many forms, ranging from very simple (such as a dedicated folder on the network or intranet to place copies of CSS-related documents) to methods more time-consuming to create and manage (such as best practices and case studies documents, databases of project and community contacts, and project fact sheets).

Several national-level websites have also been established to facilitate the sharing of practices among DOTs:

- ContextSensitiveSolutions.org was developed by a joint group of transportation industry groups and nonprofits under sponsorship by FHWA and is the largest source of information, including best practices, principles, images, news updates, discussion forums, state DOT profiles and hundreds of documents that DOTs use within their CSS processes.
- The FHWA website has a good overview of CSS, its origins, and the FHWA's resources and priorities relative to CSS. Click here for a summary of all of FHWA's offerings and activities, including capacity building and toolboxes.
- AASHTO's Center for Environmental Excellence also provides an excellent resource for CSS information.
- An EPA website on Tools for Public Involvement could provide useful ideas and references.

Scan

Scans are a form of peer exchange in which a DOT will send staff and representatives of some of their stakeholders to one or more of their peer agencies in other states to observe and receive information. These trips usually last 3 to 5 days and sometimes require long-distance travel. According to the National Cooperative Highway Research Program (NCHRP), through NCHRP Project 20-68, "effective scan programs both supplement and make use of other mechanisms for information exchange such as publications in trade and professional journals, conferences, and peer-to-peer forums. A scan program focuses on face-to-face discussion of current experience, providing opportunities for a uniquely rich exchange of information that is difficult or impossible to replicate through written materials, telephone conversations, and e-mail correspondence." Click here for information on how to request a scan through FHWA and

NCHRP. Examples of previous scans include: Best Practices in Right-of-Way Acquisition and Utility Relocation and Best Practices in Transportation Asset Management. When budgets restrict the opportunities for travel, states can also set up a webinar or conference calls to facilitate an exchange.

8. How Can the Effectiveness of a Training Program be Evaluated?

8.1 Why should a training program be evaluated?

> "Assessment per se guarantees nothing by way of improvement; no more than a thermometer cures a fever."
> T.J. Marchese, AAHE Bulletin, 40, 3-8, 1987

An essential part of a successful training program is adequate assessment or evaluation of the results of the training (assessment and evaluation are used interchangeably in this document). The purpose of assessment is to understand how well educational programs are working and to determine whether they are contributing to student learning and whether they have achieved the course goals and objectives.

Evaluation can and should be performed for all training classes, even those not taught directly by DOT staff. Although it is more critical with more intensive classes, such as CSS basic and specialized skills classes, useful information can be gained through seeking evaluations of awareness classes as well.

The ultimate emphasis of assessment is on the program, rather than the scores of individual students. Without evaluating results, the training program cannot improve itself nor adapt to the changing needs of staff and the DOT. Evaluation is necessary but not sufficient to ensure improvement in the program; actions must be taken in response to the results of the assessment. These actions, and the assessment itself, can be governed by an evaluation plan, which will be described in more detail below. This section will also provide a variety of tools and examples for DOTs that wish to assess their training program.

Following are five reasons to evaluate a training program:

1. Inform the training program to become more effective and adaptive

2. Demonstrate progress on CSS integration to leadership and others (e.g., FHWA or public officials)

3. Justify the need for additional training funds

4. Promote CSS implementation by following up on course material and holding staff accountable for learning

5. Identify process improvement initiatives

The first reason, the need to inform the training program, is illustrated in Figure G below. Course objectives are initially set, then training is held. Course evaluation provides some feedback to the course objectives, in terms of the immediate results of the class. But the real test of whether staff have learned CSS concepts is how they implement them in their work. Challenges may come up in day-to-day work that were not foreseen in the initial training. Establishing communication

with previous trainees, whether through post-training evaluations, individual action plans or informal group discussion, can allow those challenges to be addressed in future classes. In this way, the CSS training program can be continuously adapted to best meet the current needs of the staff.

Asking questions of those implementing CSS such as the following might help inform future training classes. What knowledge and skills do you need to apply CSS? What is the best method to get knowledge and skills? How well do you feel the training prepared you for application?

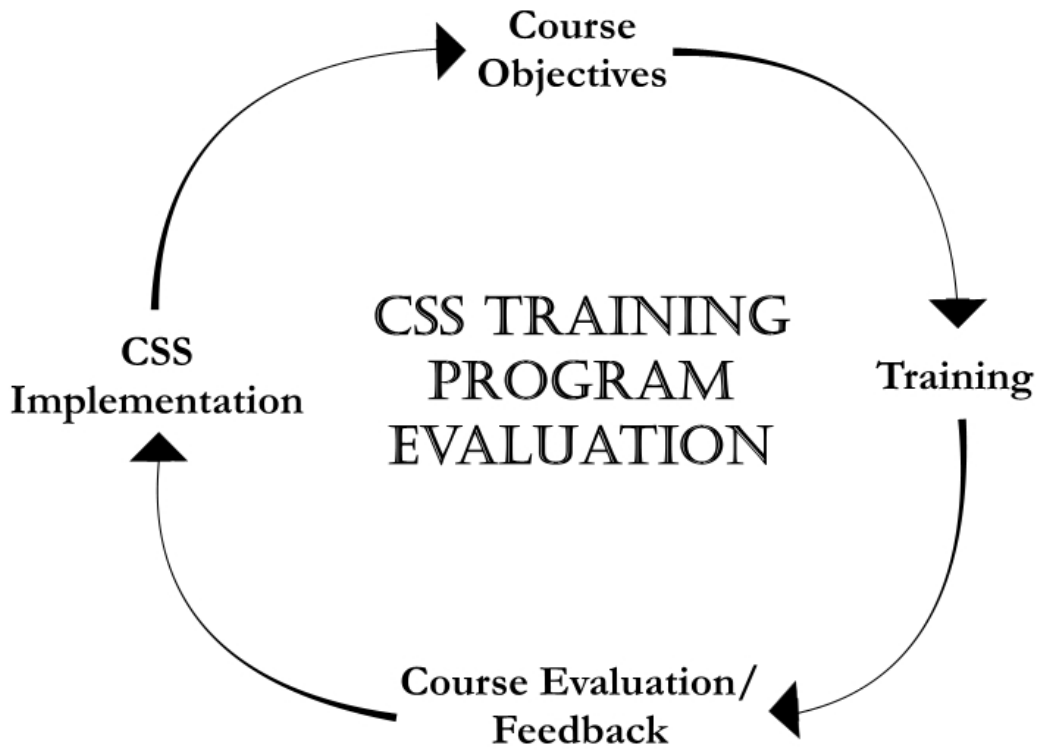

Figure G. Training Program Evaluation Feedback Loop

Train Your Staff to Become Effective Trainers

If your state DOT has elected to offer its own training courses, the staff who are conducting training need to be knowledgeable about the material and have some experience in teaching in order to be most effective. Several interviewees mentioned specifically the importance of having experienced instructors as one aspect of effective training, as discussed in Section 1.4. Learning how to be a more effective instructor may also benefit the overall Training Program as it may improve the quality of course materials. Two classes offered by National Highway Institute can provide such training to state DOTs:

- Instructor Development Course - The 3.5-day class is geared to instructors who anticipate teaching from a complete set of training materials (instructor manuals, participant workbooks, and visual aids) developed by training professionals. This Instructor

Development Course will provide new and experienced instructors the knowledge and skills to deliver more effective training. NHI Course #420018.

- Developing High-Impact Training - This web-based course consists of six Web conferences and several self-directed pre-session assignments for a total of 6.5 hours. This course focuses on proven Instructional Systems Design (ISD) principles that help training designers develop meaningful and effective training content. NHI Course #420046.

8.2 What are the characteristics of a good assessment?

A good training assessment plans, before a class is taught, what kind of information is to be collected and how it will be used. The plan details the responsibilities for various staff to collect information, share it with others, and use it to revise the course learning objectives. Click here for a sample Assessment Plan outline. Following are six steps to assessment: (1)

- Agree on goals and objectives for learning. This should have been covered previously, during the development of the course. Without a set of goals and objectives to measure, effective assessment is virtually impossible since there is no basis to show success of the class.

- Design and implement a thoughtful approach to assessment planning. Assessment can be focused on evaluating a course or program as it is ongoing for the purpose of providing feedback to improve it ("formative" assessment), or it can come after the course or program has been in operation for a while or at its conclusion, to make judgments about its quality or worth compared to previously defined standard ("summative" assessment). Understanding what your purpose is in the assessment will help determine the most effective methods to apply. Both forms of assessment are valid and useful for CSS training programs, and ideally both should be included in an overall training assessment.

- Involve those responsible for course development as well as those who are in the audience for the course. Widespread engagement, including the course participants, can ensure their buy-in to the process. Since many of the assessment methods are voluntary and will involve the effort of participants, they need to be motivated to complete them.

- Select or design and implement data collection approaches. The methods used to obtain information on how well course participants achieved the learning objectives can vary by the purpose of the course, the length of the course, the audience involved, and various other factors. A list of example assessment methods, along with notes about when they may be most applicable and where they have been applied by state DOTs to date, is included in the next section. Keep in mind that employing more than one data collection approach may be more effective.

- Examine, share and act on assessment findings. If the course was initially developed using a committee or task force, the assessment findings should be reported back to that

group. Changes to the course learning objectives will need to be discussed by the group and acted upon promptly. The purpose of assessment is to improve the effectiveness of training, and taking action is an essential component of improvement.

- Regularly reexamine the assessment process. Adapt the assessment process as you experience which methods are most effective for particular classes.

8.3 How can an individual's knowledge, skills and behavior be measured?

One model of thinking about training evaluation has been presented by Donald Kirkpatrick in the form of four levels: (2)

- reaction of student - what they thought and felt about the training
- learning - the resulting increase in knowledge or capability
- behaviour - extent of behaviour and capability improvement and implementation/application
- results - the effects on the business or environment resulting from the trainee's performance

The four levels are cumulative, each more difficult to measure than the last, and all are needed to fully evaluate the effectiveness of the training. For example, many courses already employ end-of-class questionnaires (sometimes called "happy sheets") to capture the reactions of participants (level 1), but this method of follow up often focuses on evaluating the quality of the course itself, rather than evaluating whether the student actually learned anything. And an end-of-class questionnaire simply cannot measure whether behavior has changed or results have taken place, which both need to be assessed after the participant has returned to work, rather than immediately following the class. Such questionnaires can indeed be helpful to improve future training classes, but fall short of a full evaluation of training.

The table below provides more information about Kirkpatrick's four levels and how they are connected to evaluation methods. For a full description of the levels, with even more ideas for methods and applicability, click here.

Evaluation Characteristics	**Examples of Evaluation Methods**	**Relevance and Practicability**
LEVEL 1 REACTION		
Reaction evaluation is how the delegates felt about the training or learning experience	e.g., 'happy sheets', feedback forms. Also verbal reaction, post-training surveys or questionnaires	Quick and very easy to obtain. Not expensive to gather or to analyse.
LEVEL 2 LEARNING		
Learning evaluation is the measurement of the increase in knowledge - before and after	Typically assessments or tests before and after the training. Interview or observation can also be used.	Relatively simple to set up. Clear-cut for quantifiable skills. Less easy for complex learning.
LEVEL 3 BEHAVIOR		

Behaviour evaluation is the extent of applied learning back on the job - implementation	Observation and interview over time are required to assess change, relevance of change, and sustainability of change.	Measurement of behaviour change typically requires cooperation and skill of managers.
LEVEL 4 RESULTS		
Results evaluation is the effect on the business or environment by the trainee	Measures are already in place via normal management systems and reporting - the challenge is to relate to the trainee.	Individually not difficult; more complex to assess the whole organisation. Process must attribute clear accountabilities

Examples of Level 1 (Reaction) and Level 2 (Learning) Assessments

Examples of training evaluation methods that have been used by state DOTs interviewed or other agencies are listed below. Some are direct (ask participants to display their knowledge and skills, such as tests, presentations or assignments), others are indirect (ask participants to reflect on their learning rather than demonstrate it). Additional non-CSS-specific evaluation examples and resources are listed in the box below. Refer to the above discussion of levels of evaluation and the overall learning goals for your training program for help in selecting which method(s) is/are appropriate to evaluate your course(s).

1. Pre- and Post-training skill tests assess learners on specific CSS-related content both before and after the training. Questions are the same each time, so the scores should go up after the training. Examples:
    - California uses a short multiple choice test that measured a rise in scores among every district. See test questions and sample test results. The test is also useful to provide feedback to determine whether the right target audience has been chosen (anyone who scores above 20% correct on the pre-test has too much knowledge to be in the course. Participants should score at least 80% correct on the post-test.
    - Colorado used a content-based survey to assess learning following its awareness course.

2. Pre- and Post-training self-assessment skill tests ask the participants to rate how comfortable they are with various concepts, values and principles that are taught in the course. Again, this is administered both before and after the training and can measure not only the learning of content but attitudinal changes as well. Example:
    - This sample self-assessment test provided shows how learners can be tested both on core content and on whether the course affected their beliefs and attitudes, which is central to CSS.
3. Post-training evaluations focus on learning in the course and ask learners to describe how they will apply it in their daily job performance. Four key questions are: (3)
    - To what extent were the identified training needs/objectives achieved by the program?
    - To what extent were the learners' objectives achieved?

- What specifically did the learners learn or be usefully reminded of?
- What commitment have the learners made about the learning they are going to implement on their return to work?
- Example: North Carolina DOT's two-day basic course evaluation includes questions that probed how participants might go back and apply CSS in their work.

Additional Evaluation Resources

Following are some additional, non-CSS-specific resources on evaluating learning. Some are intended for application to university courses but could be adapted for CSS training.

Examples of non-CSS-specific "reactionnaires"

What Do They Know, Anyway?: Making Evaluations Effective

Alternative Activities for Assessing Learning (lots of ideas for content- and attitude-based evaluations)

Tools for Teaching: Fast Feedback (ideas for quick feedback on learning during the course, see section "Checking Students' Understanding of the Material")

Assessing New Practices (post-course feedback evaluation to assess learning based on specific goals and responses to new teaching techniques)

Examples of Level 3 (Behavior) and Level 4 (Results) Assessments

Evaluating behavior and overall results from training (or organizational performance) is critical to judge whether the training is achieving its objectives at the organizational level. Evaluating the effectiveness of training at the behavior and results level can be very difficult because evaluations typically focus on evaluating either individuals' personal performance or aggregate organizational performance. Improvements at the organizational level are the real measure to determine whether skills transfer is happening and the training is truly effective, but it can be difficult to single out the effectiveness of training alone from an organizational level performance measure. Training will be just one of a number of factors that enable the organization to achieve the desired results. Evaluations of training need to be just one element of a set of organizational performance measures. Refer to NCHRP Document 69: Performance Measures for Context Sensitive Solutions - A Guidebook for State DOTs for a holistic sense of what needs to be understood and then measured to meet an organization's goals for implementing the CSS philosophy.

Evaluating behavioral change often requires more than one method of assessment because it is less easily defined and quantified. Following are several examples of how different state DOTs have addressed CSS training evaluation and overall organizational performance for CSS.

1. Individual action plans ask participants to plan how they will begin incorporating specific CSS skills and principles at work, including a commitment to methods they will use and a timeline for implementation. Action plans are meant to be kept simple, straightforward and achievable. To really be meaningful, someone would need to follow up with participants later to see whether they have actually done what their action plan proposed. See examples on pages 6-7 of: http://www.businessballs.com/trainingevaluationtools.pdf

2. Time-elapsed evaluation involves follow-up with participants several months after training to better judge how well they are applying what they learned. Could also incorporate informal group discussions to work through some of the challenges of applying CSS. This technique could be combined with any of the above methods. Example:
   - Tennessee DOT's CSS Awareness Training Follow-up Survey focuses on how well trainees are using CSS after their return to their jobs. It was administered four to six months after the course took place. It asks simple questions about whether and how employees are applying CSS principles in their job, whether more training was needed, and what other next steps might be necessary to strengthen the CSS practice at their place of work. See survey questions and a summary of results.
   - North Carolina DOT conducted a survey of employees who had attended the CSS class to see how CSS principles were being implemented in their day-to-day work. A cover letter was prepared to encourage people to respond to the survey, and responders were entered in a raffle for a $250 gift card as an incentive. The survey tool focused on understanding how CSS principles were being used in the workplace, including the challenges of implementing them and the identification of additional training and resources needed to better integrate CSS into their daily activities. In 2005, a TRB paper titled CSS Training Experience was presented at the annual Transportation Research Board's CSS Task Force meeting that reported on the results of this survey.

3. Listening sessions. These informal discussions can explore the satisfaction of students with their experience and measure change in attitudes or opinions after they have had time to apply the concepts in their daily work. Would provide a different kind of information than written, formal evaluations and could be used in conjunction with more formal methods. One advantage is that the process of having people share their challenges and thoughts can in itself become a form of internal peer exchange. See an example from New Hampshire DOT.

4. External customer surveys. The CSS process stresses the importance of working with stakeholders and considering their differing points of view. Similar to the shift in the business world to customer-friendly models, the DOT or organization needs to measure their success, in part, based on the perceptions of their stakeholders and the public, who are their customers in the community. If a CSS training course is truly successful, all the efforts of those trained individuals should add up to a more satisfied public. Utah, Nebraska, Minnesota and the FHWA Federal Lands Division use external customer surveys to inform discussions of what needs to be improved both at the organizational

and at the individual staff skills level, and what actions and training might still be necessary. Examples:

- Utah has two examples of simple evaluation forms distributed by contractors so that local stakeholders, businesses and residents can grade their performance in meeting various community objectives, such as responding to community concerns, involving stakeholders, minimizing impacts on businesses, etc.
- Two examples from the FHWA Federal Lands Highway Division ask the end users of a facility to broadly evaluate the project and the development process. Evaluation questions relate to: project development elements like the scoping document; the aesthetics of the project and its various elements; sensitivity to environmental considerations, such as preservation of existing vegetation; and protection and preservation of natural, historical, and cultural resources.
- Another example from Federal Lands Highway (FLH) asks partners to evaluate how successfully FLH led the collaborative process, including how well the project was able to fit the mission and objectives of partner environmental agencies and how responsive FLH was in coordinating and fulfilling the NEPA process.
- Federal Lands has also used surveys to ask program participants (administrative division offices) to score the FLH's overall programs.
- Nebraska Department of Roads (NDOR) performs an annual survey of residents, state senators, highway construction contractors, and right-of-way property owners to measure "External Customer/Partner Satisfaction." NDOR's goal is to maintain 90% customer satisfaction and the results are published in their annual Performance Measures Report (see page 18).
- Minnesota DOT pursues public input using several avenues, including a Statewide Omnibus Transportation Survey that has been conducted annually since 1987. The 2006 survey randomly contacted by phone 800 residents in Minnesota 18 years and older, including 400 metro area residents, and included questions on service perception, reliability of communications, convenience and efficiency of trips to work and bicycling and walking. Mn/DOT is also in the process of revising its Hear Every Voice public participation program, which includes several other methods of public input and feedback on departmental performance (click here for more information). Additional examples of Mn/DOT's public outreach on specific projects include the: Twin Cities Metro Area Ramp Meter Study, 2007 Bottleneck Reduction Process, and Non-Traditional Transportation Stakeholder Dialog Project.

5. Internal DOT surveys. Many DOTs are asking their employees and divisions to rate the performance of the agency and how well it supports them in their own job performance. Some of these surveys try to ascertain specifically whether people feel they have the resources they need to practice CSS in the way they are expected to. Results from such surveys could provide information on how people's behavior is changing related to training provided, as well as overall departmental performance. Examples:
    - The California State Department of Transportation (Caltrans) conducts Employee Surveys to benchmark the Department's organizational health against national norms for the general working population and to help improve the organizational climate of the Department as a whole.

- New York State DOT performed an audit of its regional divisions with a simple questionnaire about how each region is practicing CSS. The one-page form asks questions ranging from whether the region develops a Public Involvement Plan for each project to what steps the region takes to assess the context of a transportation project.

6. Statistical performance measures. Several agencies publish annual or even quarterly reports on performance statistics that they can track over time. These reports keep the agency accountable to their performance in a public and transparent way that can very effectively lead to organizational change. While specific performance measures related to CSS implementation are difficult to determine, some states have taken steps in that direction. Examples:
   - Washington State DOT (WSDOT) publishes a quarterly report called the Gray Notebook of performance measures that covers everything from the number of highway closures due to weather to the percentage of projects completed on schedule to a rest area customer satisfaction rating. See http://www.wsdot.wa.gov/accountability/graynotebook/default.htm.
   - NYSDOT's Office of Design is developing a way to measure and track a wide range of performance indicators including the quality and completeness of public involvement plans, external customer satisfaction, organizational effectiveness, and workforce development.
   - Maryland SHA developed performance measures for how CSS is applied to projects. When the team began work on developing performance measures for MSHA's projects, they realized that they needed to establish goals in order to have something to measure against. The group developed a list of goals for performance measurement after a series of key person interviews and a consensus-building effort with senior managers at MSHA.
   - Nebraska Department of Roads's annual Performance Measures Report (discussed above) is another example. See page 18 in the report for CSS-related information.

Footnotes:

(1) Adapted from: Palomba, C. and T. Banta. Assessment Essentials: Planning, Implementing, Improving Assessment in Higher Education. New York: Jossey-Bass. 1999.

(2) Adapted from: Donald Kirkpatrick's Learning Evaluation Model 1959; with review and contextual material by Alan Chapman 1995-2007.
http://www.businessballs.com/kirkpatricklearningevaluationmodel.htm

(3) http://www.businessballs.com/trainingprogramevaluation.htm

Existing CSS Classes

Through the research and interview process during the preparation of this Guide, information about existing CSS classes was compiled to provide examples to state DOTs interested in expanding CSS-related skills. These classes are divided into three groups: Awareness, Basic and Specialized Skills (click on the names for more information about how each group is defined). Each summary table below describes the purpose or objectives of each course, the intended audience, and other course logistics. Wherever available, materials for the existing state DOT classes in the table (such as slides, agendas and handouts) have been provided to serve as examples to state DOTs interested in developing or improving their own CSS training. It is recommended that anyone using or borrowing from these materials credit the sources used. Anyone wishing to contact the sources should consult the list of CSS contacts for state DOTs involved in this project.

- Table of existing CSS AWARENESS classes from state DOTs (What is an awareness class?)
- Table of existing CSS BASIC classes from state DOTs (What is a basic class?)
- Table of existing CSS SPECIALIZED SKILLS classes. The specialized skills courses listed are divided into three distinct groups:
    - Courses offered previously by state DOTs, which may be useful as examples to other state DOTs developing their own courses
    - Courses offered by FHWA Resource Center staff, which may be useful as examples or which may be presented to host DOTs upon request
    - Other commercially-available third party courses, which are generally offered for staff to attend at a predetermined course location or to host by a state DOT upon request

More about the Specialized Skills Classes table

An index at the beginning of the specialized skills table indicates which functional area and CSS topic each course relates to; readers can then follow the page numbers to find information about each course. The table includes details on the course logistics and modules included. The length of courses, cost, delivery format, offering organization, and other logistics vary considerably and provide a variety of options to state DOTs looking to enhance staff's CSS-related skills.

Due to the number of courses available and the variety of topics covered, subsets of the main table are available for each functional area and each CSS topic (see definitions below). Since one class may be applicable to several functional areas or topics, there is overlap in the subset tables (see the complete table for no overlap). In addition, an excel version of the index table is available for those who wish to use filters to make their own

custom list of courses. In this manner, DOT training coordinators or managers can more strategically match the specific needs of their staff with the knowledge and skills offered by the various courses. A description of the functional areas and CSS topics that are utilized in the table follow.

Subsets of Specialized Skill Classes:

- Functional Areas (see definitions below):
- Long Range Planning and Programming
- Environmental
- Location and Design
- Construction
- Operations
- Maintenance
- Project Managers

CSS Topics (see definitions below):

- Decision-making
- Design Flexibility & Safety
- Stakeholder Involvement
- Interdisciplinary Teams
- Understanding Context
- Communication Skills (i.e. consensus building)
- Human and Natural Environment Compatibility

Where do I fit?

Since functional areas may have different meanings in different states, a set of definitions for how they have been applied in the Training Guide follow. Project delivery includes several phases of transportation planning and project development. The phases can include:

- Area-Wide Planning - Includes long range transportation planning (see functional area #1 below) and regional studies
- Conceptual Strategy Development - Includes corridor studies, feasibility studies, pre-TIP studies, Phase 1 environmental studies. May include some employees in the environmental functional area (#2 below).
- Project Development - NEPA studies, engineering design, construction, operations and maintenance. Includes functional areas 2 - 7 below.

Functional Area Definitions for the Training Guide:

Long Range Planning and Programming: This phase of project delivery encompasses the efforts to develop a long range transportation plan and the subsequent efforts by

MPOs/local governments/DOTs to prioritize projects for inclusion in a multi-year statewide transportation improvement plan (TIP). Disciplines involved in this work range from civil engineers, financial specialists, land use/transportation engineers, economists, geographers, etc. Landscape architects and urban designers may be able to play an important role to help people envision different scenarios.

Environmental: This phase of project delivery encompasses work that is generally done once a project is programmed in a TIP (some states like Florida do not program projects until environmental work is complete). This work includes compliance with many environmental regulations/laws such as the National Environmental Policy Act and involves the specialized expertise of many disciplines to complete the work (biologists, ecologists, archaeologists, historic architectural experts, noise and air scientists, social scientists, public involvement specialists, economists, environmental planners, community planners, engineers, landscape architects, etc.).

Location and Design: This phase of project delivery is closely linked to the environmental phase in that it is generally done once a project is programmed in a TIP. It includes conceptual and preliminary design as well as completion of right of way plans and finally construction (or final) design plans. Disciplines involved in this work include primarily civil engineers (roadway, structures, hydraulics, geotechnical and traffic) but also involve geologists, soil scientists, landscape architects, utility specialists, right of way agents, surveyors, etc.

Construction: This phase of project delivery encompasses the work involved in the actual construction of a project. The disciplines involved in this work include primarily civil engineers with experience in construction management, contractors and inspectors.

Operations: Operations analysis work takes place in all phases of project delivery from long range planning efforts to maintenance activities. Operations staff is concerned with system wide operations and management as well as highway safety. The primary discipline involved in this work is civil engineers trained in traffic operations, safety and asset management.

Maintenance: This phase of transportation delivery involves the continual preservation of the structural and functional integrity of highways and bridges. The primary disciplines involved in this work consists of civil engineers and maintenance supervisors and workers taking care of day to day roadway issues such as pavement conditions, site distance constrictions, drainage problems including road closure considerations and impacts from natural disasters, as well as small scale construction projects.

Project Managers: Although project managers (PM) may work in different areas of project delivery, their role is essential and critical as it relates to efficient and effective decisions (getting projects delivered on time and within budget). A team leader’s competency in project management involves integrating comprehensive strategies, technological innovations, production engineering, and internal management. Leaders must be able to establish direction, form alliances, and motivate performance all the

while optimizing time, cost, procurement, quality, communications, risk, scope, and human resources. Although experience is recognized as the biggest difference maker, basic academic preparation and training in such areas as technical, managerial, financial, information technology, and legal matters is also seen as fundamental to leadership success.(1)

PMs are critical in CSS implementation as they are the ones that must be able to articulate the decision-making process from start to finish and to have the ability to ensure that this process is realized. They make strategic decisions that affect the entire CSS decision-making process from problem definition, vision, evaluation criteria, alternatives analysis to solution identification and implementation. Because they are primarily responsible for planning work, it is critical that they have a clear understanding of the resources (disciplines) needed to work collaboratively towards a solution as well as excellent communication skills to ensure that internal and external stakeholder input is fully considered during decision-making. If the PM does not understand the CSS principles and qualities and how to incorporate them in decision-making it is almost impossible to develop a context sensitive solutions outcome. As such, PMs are addressed separately to note their specialized training needs relative to CSS. This is closely linked to decision-making processes but separated to place emphasis on the role and responsibilities of PMs. Several state DOTs have PM educational programs (e.g. Maryland, Minnesota, California) and these are included in the specialized skills training classes table. Note, it will depend on the type of project that a PM is managing to decide if the specialized skills are a proper fit.

CSS Topical Area Definitions:

Decision-making: This topic is focused on the process components (framework) for decision-making relevant to project delivery. The major steps of decision-making (problem definition, project vision, data collection and evaluation criteria, alternative analysis and solution implementation) as well as roles and responsibilities are addressed under this topical area. This also includes management considerations such as financial responsibilities.

Design Flexibility: This topic is focused on understanding the research behind design criteria and how they shape design choices. It relates to fully comprehending the rationale behind the charts/tables in AASHTO’s Geometric Design Manual (Greenbook) or similar State or Local agency policies and mining the flexibility inherent within the manuals. It helps the designer get “underneath the hood” of the Greenbook to understand what is driving design considerations.

Stakeholder Involvement: This topic is focused on understanding who stakeholders are and how to engage them through meaningful techniques to inform decision-making.

Interdisciplinary Teams: This topic is focused on the composition, development, and management of a multi-disciplinary group that works collaboratively towards a shared

vision. It is concerned with team building techniques and effective strategies that promote efficient and effective decision-making.

Understanding Context: This topic is focused on the early and upfront identification of issues, opportunities, needs, interests and concerns related to the natural and human environment as well as transportation needs. It is process oriented in that it deals with how you go about defining the context. The scoping phase of the NEPA process is an example of a process to define certain components of context. Placemaking workshops/audits are another example of a process used to define context.

Communication Skills (i.e. consensus building): This topic is focused on the full range of interpersonal skills needed to effectively convey information so that it is received and understood. Consensus building is the fundamental way in which communication skills manifest themselves as part of the CSS process. Consensus is defined as a general feeling of agreement on a choice being made or a course of action. Consensus represents a cooperative effort toward decision-making rather than emphasizing the competitive nature of majority voting. In a consensus process the members come together to find or create the best solutions by working together. A consensus decision process typically goes through three stages: Discussion, Proposal, Modification. Differences of opinion may exist, but each member agrees to support the group's collective evaluation, each member can live with it. It is not unanimous agreement – members may choose to consent to a decision they disagree with, but recognize it meets the groups needs and they can live with it.

Human and Natural Environment Compatibility: This topic focuses more on the substantive and procedural regulations, laws, guidelines and policies that inform the protection of the natural and human environment. This topic area is concerned with educating transportation professionals on the numerous social, economic, cultural, historical, scenic, aesthetic, biological and ecological considerations as part of transportation project delivery including how to identify these considerations.

Footnotes:

1 NCHRP #20-69 Guidance for Transportation Project Management, forthcoming.

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
COLORADO: Context Sensitive Solutions…A Better Way of Doing Business **Effective Techniques:** Group role-playing exercise **Materials:** Agenda Slides Exercise Survey	**Length:** 4 hours **Intended Audience:** Engineers and graduates of the CDOT Maintenance Training program **Trainers:** CDOT staff from Project Development; Environmental Programs **Offered:** Ongoing 2 classes to date	• Identify and discuss CSS principles and practices. • Establish a better understanding of how CSS can be implemented in business activities. – Management / Administration – Design / Construction / Maintenance – Environmental • Establish a shift in CSS culture within CDOT. – Widen our "field of vision" – Encourage CSS practices to become more commonplace • Certification / Acknowledgement of Commitment.	• Welcome / Introductions • Learning Objectives • What is Context Sensitive Solutions? – Exercise No. I: Personal Involvement • Why CSS? – Exercise No. II: "Within Our Project Limits" – Exercise No. III: "Beyond Our Project Limits" • A History of Context Sensitive Solutions • Learning Objectives Review • The Project Stakeholder – Exercise No. IV: "In Their Shoes" • The Multi-Disciplinary Team – Exercise No. V: "In Our Shoes" • Apprehensions, Challenges and Benefits of CSS • Learning Objective Review • Successes of CSS • What is My Role? • Conclusion: Survey, Acknowledgement of Commitment and Questions
ILLINOIS: CSS Awareness Class **Materials:** Description Manual	**Length:** 4 hours **Intended Audience:** District supervisors, professional engineering societies **Trainers:** IDOT staff from Program Development; Design & Environment **Offered:** Ongoing 11 classes to date	This class is designed to provide supervisors with the understanding of the department's policy on CSS and how the CSS process is addressed in all phases from planning through operations. CSS Learning Outcomes: ▪ The history of CSS from the federal and state perspectives, including Public Act 93-0545 ▪ Departmental policy D & E 21 on CSS BDE PM 48-06 ▪ The CSS concept and basic principles; ▪ The guidelines for the stakeholder involvement process ▪ How to identify stakeholders ▪ The principles of flexibility in design ▪ Importance of construction and operations ▪ The importance of documenting decisions during the CSS process.	▪ Introduction ▪ CSS History ▪ IDOT Policy ▪ The CSS Process ▪ Summary

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
ILLINOIS: CSS for Local Agencies **Materials:** Description Manual	**Length:** 4 hours **Intended Audience:** Local agency staff responsible for implementing CSS for their agency, or who will represent their agency's interests **Trainers:** IDOT District Local Roads Engineers; Office of Planning and Programming **Offered:** Ongoing 7 classes to date	To provide local agencies with the understanding of the department's policy on CSS and how the CSS process will involve local agencies. CSS Learning Outcomes: ▪ Understanding of the department's CSS policy ▪ Understanding of the basic CSS approach ▪ Understanding of the benefits of using CSS for projects conducted by their local agency ▪ Understanding of their local agency's role as a stakeholder for CSS projects done by the department	▪ Introduction ▪ CSS History ▪ Selecting Projects ▪ Components of CSS o Consensus o Project Study Group o Stakeholders o Technical Advisory Group ▪ The CSS Process o Stakeholder Involvement o Developing the Purpose and Need o Defining Alternates o Flexibility in Design o Liability vs. Engineering Judgment o Construction o Operations/Maintenance ▪ Bringing it all together ▪ Summary
MASSACHUSETTS: Project Development and Design Guidebook Overview **Materials:** Slides	**Length:** 6 hours **Intended Audience:** Staff across all functional areas, consultants and local government representatives **Trainers:** Consultants (VHB, Inc.) **Offered:** 2006 About 10 classes	Introduce staff to the updated Project Development and Design Guidebook, which includes updated and streamlined policies and guidelines, and a revised Project Development Process. These policies and guidelines address CSS.	▪ Why Revise the Highway Design Manual? ▪ Project Development and Design Guide Background ▪ MassHighway Design Manual ▪ Design Manual Task Force ▪ Guiding Principles for Guidebook ▪ Outline of New and Updated Chapters

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
MICHIGAN: CSS Awareness Training **Materials:** Slides Appendix A Appendix B Appendix C Appendix D	**Length:** 4 hours **Intended Audience:** Planners, regional managers (usually engineers), construction staff **Trainers:** Consultants (HNTB) **Offered:** Ongoing About 10 classes to date	By adopting CSS, MDOT joins approximately 15 other states that have institutionalized a CSS approach to their work. All states, by FHWA mandate, will be required to have implemented a CSS training program and have adopted a CSS policy by 2007. This awareness training, along with ongoing CSS policy initiatives and implementation procedures, constitute MDOT's fulfillment of this federal requirement.	▪ Part 1: Overview Introducing and defining the concept of CSS (4 sessions, 45 minutes). ▪ Part 2: Policy Understanding federal and state policies related to CSS (4 sessions, 30 minutes). ▪ Part 3: Application Applying CSS to all phases of MDOT activities— administration, planning, design, construction, maintenance and operations (5 sessions, 45 minutes). ▪ Part 4: Summary Examples of improving project delivery with CSS (1 session, 30 minutes).
MICHIGAN: CSS Awareness Training for MPOs **Materials:** Slides	**Length:** 4 hours **Intended Audience:** MPOs, County Road Commissions, smaller cities **Trainers:** Consultants (HNTB) **Offered:** Ongoing About 10 classes to date	▪ Provide an understanding of CSS principles ▪ Provide knowledge of when and how to use CSS ▪ Provide a guide on how local, state, and federal units of government can work together to effectively deliver CSS ▪ Provide encouragement to practice CSS at a local level	▪ Session 1: Introducing CSS ▪ Session 2: Engaging Stakeholders ▪ Session 3: Employing Interdisciplinary Teams ▪ Session 4: Embracing Multiple Modes ▪ Session 5: Understanding Context ▪ Session 6: Using Design Flexibility ▪ Session 7: Applying CSS
MINNESOTA: Context Sensitive Design & Solutions Overview **Effective Techniques:** Group role-playing exercise **Materials:** Group Exercise	**Length:** 2 hours **Intended Audience:** Any internal or external audience **Trainers:** Mn/DOT staff **Offered:** Ongoing 8-12 classes per year	This 2-hour interactive CSD&S overview has been designed for any audience and is easily tailored to the specific needs of any audience. Includes a group exercise called "Whose Context Is It Anyway?" in which the presenter runs a public meeting with class members playing stakeholder roles.	▪ What context is and why its important ▪ What CSD&S is and is not ▪ Mn/DOT's CSD&S philosophy, approach, policy, and commitment ▪ Mn/DOT's CSD&S core principles and the benefits we see and expect from our application of them ▪ What Flexibility in Design is and is not ▪ A wide range of case study examples

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
TENNESSEE: CSS Overview Training **Effective Techniques:** Senior executives as teachers **Materials:** Agenda Slides	**Length:** 1-2 hours **Intended Audience:** Supervisors from all functional areas **Trainers:** TDOT staff, including upper and mid-level managers, from Project Management and Environment & Planning **Offered:** 2006 About 10 classes Additional classes as needed	▪ Explain new Statement of Commitment to CSS ▪ Show leadership support for CSS ▪ Highlight existing CSS-related activities and projects ▪ Illustrate how CSS fits into every functional area within TDOT	▪ Welcome and Introduction – What is CSS, CSS principles, Defining Context, CSS Benefits ▪ How CSS fits into all project phases and how it applies to each employee – Public Involvement, Planning, Environmental, Design, ROW and Utilities, Construction, Operations & Maintenance ▪ Evolution of CSS at the Department, Project Examples ▪ Discussion session
FHWA RESOURCE CENTER: Context Sensitive Solutions **Materials:** Slides	**Length:** 2-3 hours **Intended Audience:** DOT executives **Trainers:** K. Lynn Berry, (FHWA Resource Center) **Offered:** 2007, once	This presentation was made by K. Lynn Berry for executives at South Dakota DOT in April, 2007. It was intended as an overview of CSS, explaining how CSS could benefit the DOT.	▪ Major events and legislation ▪ CSS core concepts ▪ CSS approaches from other states and MPOs ▪ CSS and planning

AMERICAN SOCIETY OF CIVIL ENGINEERS:
CSS Basic Course

Length:
2 days

Intended Audience:
Transportation planners, designers, construction managers, municipal planners, and officials involved in the planning and decision-making process of transportation improvements

Trainers:
Consultants (Vollmer Associates)

Offered:
As requested nationwide

Materials:
Brochure

Course Benefits

- Obtain awareness and appreciation of the benefits of Context Sensitive Solutions
- Discover the definition and importance of place and principals of placemaking and defining community context
- Gain an understanding of the community's role in consensus building
- Learn how to apply flexible design standards
- Learn practical application of principles through case study activities
- Obtain useful resources information

Modules	Module Topics/Learning Objectives
Introduction – What are Context Sensitive Solutions (CSS)?	▪ Introductions & Overview of Training Topics ▪ Overview of Project Development Process ▪ Planning & Programming
Placemaking, Visioning and Defining Context	▪ Definition of Place & Principles of Placemaking ▪ How to Define Community ▪ Context & Scoping ▪ Community Visioning Techniques ▪ Community Context Audit
Consensus Building/Public and Stakeholder Involvement	▪ Community's Role in Context Sensitive Design ▪ Approach to Consensus Building ▪ Engaging the Pubic in Context Sensitive Solutions ▪ Methods of Community Outreach
Flexibility in Design in the Context of the Community	▪ Knowing When to Apply Flexible Design Standards
Case Study Overview, Organization & Instructions	▪ Case Study Example & Review of Case Study Materials
Wrap Up/Group Discussion	▪ Wrap Up (Discussion)
Case Study Activity Introduction of Case Studies Case Study Activities	▪ Interactive Group Activity – Group Role Playing, ▪ Virtual Site Visit, Community Context Audit and Scoping Field View
Case Study Activity – Group Activity	▪ Group Consensus on Community Context Audit Findings & Scoping (Role Playing) ▪ Discussion of Key Issues & Preliminary Vision ▪ Identification of Key Stakeholders & Public ▪ Involvement Program ▪ Prepare Group Presentations
Flexibility in design standards and criteria – Design tools	▪ Examples of Flexibility in Design Standards and Criteria ▪ Functional Classification, Levels of Service, Design Speeds, Lane Widths, Safety ▪ Traffic Calming & Roundabouts ▪ Examples of Flexibility in Design Standards and Criteria ▪ Architectural Treatments on Barriers/Structures ▪ Designing for Bicycles and Pedestrians
Wrap Up/Group Discussion	▪ Wrap Up (Discussion)

CALIFORNIA:
CSS Basic Course*

Length:
3 days

Intended Audience:
Caltrans staff from all functional areas, half of slots offered to local stakeholders

Trainers:
Consultants (CH2MHill)

Offered:
2005 – 2006
14 classes statewide

Materials:
Agenda
Pre- and Post- Training Survey
Training Summary

*Caltrans has partnered with ITS Technology Transfer Program to offer a 2-day version of this course statewide during 2008-2009. For information on that delivery, please see the Course Website and Course Outline.

Modules	Module Topics/Learning Objectives
Introduction and Overview (30 minutes)	▪ Introduce presenters and participants ▪ Provide ground rules and course overview/approach ▪ Cover logistics
What is CSS? (4 hours, 45 minutes)	▪ Understand definition, framework, and guiding principals of CSS ▪ Understand "context" and identify context elements in a variety of settings ▪ Learn steps of a context sensitive approach ▪ Introduce team dynamics concept
Stakeholder Engagement (2 hours, 15 minutes)	▪ Understand the relationship of stakeholder involvement to a context sensitive approach. ▪ Understand how stakeholder involvement relates to Caltrans policy ▪ Learn to identify stakeholders ▪ Recognize the elements of successful stakeholder involvement ▪ Learn how to plan for stakeholder involvement ▪ Identify methods for effective stakeholder involvement
Dealing with Conflicts (2 hours, 30 minutes)	▪ Understand the nature of conflicts ▪ Understand how collaborative communication can harness tension and prevent conflict ▪ Explore communication tools and behaviors that assist with conflict prevention ▪ Identify approaches for conflict management
A New Kind of Problem Statement (1 hour, 15 minutes)	▪ Understand the importance of the "solution-neutral" problem statement ▪ Identify attributes of an effective problem statement ▪ Identify approached for development of problem statements that incorporate "context" information and public perceptions.
Evaluation Framework Development (1 hour, 15 minutes)	▪ Understand the usefulness of an evaluation framework in collaborative decision making ▪ Understand the basic rules for creating evaluation criteria and performance measures ▪ Understand approaches for integrating stakeholder input into evaluation criteria and performance measures
Consensus Decision Making Alternative Development (3 hours)	▪ Understand basic rules for developing alternatives in a context sensitive approach ▪ Consider approaches for linking alternatives to identified problem ▪ Recognize that "design" is a series of choices, not mandates ▪ Understand implications of design choices in alternative development ▪ Explore creativity in alternative development
Alternatives Evaluation and Selection (3 hours, 15 minutes)	▪ Understand basic rules for alternative evaluation and selection in a context sensitive approach ▪ Review terminology and methods for evaluating traffic operational quality ▪ Understand concepts of safety and methods to evaluate safety effects of decisions ▪ Understand how to use evaluation criteria to determine value trade-offs and distinguish among alternatives
Design Flexibility: Tort Liability and CSS (2 hours, 45 minutes)	▪ Learn that using design flexibility and engineering judgment to apply CSS principles will not increase liability ▪ Discuss how Caltrans, local agencies, and each participant will benefit from the CSS processes ▪ Consider opportunities and barriers for implementing CSS

CH2MHILL: * CSS Basic Course **Length:** 2 days **Intended Audience:** State DOT staff working with CSS **Trainers:** Consultants (CH2MHill) **Offered:** As requested *This course has been delivered to several state DOTs through the sponsorship of FHWA, but it was not developed by FHWA.	**Modules**	**Module Topics/Learning Objectives**
	Course Introduction and Agenda (30 minutes) CSS Framework and Principles (30 minutes)	▪ Welcome ▪ Instructor Introductions ▪ Course Objectives ▪ Course Outline ▪ Logistics ▪ History and Origin of CSD/CSS ▪ What's different with CSS ▪ Guiding principles, success factors, and process review
	Collaborative Stakeholder and Public Involvement (50 minutes)	▪ Stakeholder identification ▪ Methods for involvement ▪ Planning for public involvement
	Case Study Exercise Part 1 (50 minutes)	▪ Review background on cast study project ▪ Stakeholder identification ▪ When and how to involve stakeholders
	Group Reports on Part 1Exercise (30 minutes)	▪ Open discussion ▪ Actual project results
	Environmental Review Process, Environmental Issues Considered in Solution and Design Development (40 minutes)	▪ Relationship between NEPA and CSS ▪ "Minimize and avoid" impacts rather than "mitigate" later ▪ Reconnaissance level review of resources
	Case Study Exercise Part II (20 minutes)	▪ Identify issues and problems ▪ Develop a Purpose and Need Statement
	Group Reports on Part II Exercise (15 minutes)	▪ Open discussion
	Structured Decisionmaking (1 hour)	▪ Structured decision process ▪ Evaluation framework and criteria development ▪ Alternative analysis
	Alternative Development (2 hours)	▪ Strategy tables ▪ Conceptual development of solutions ▪ Presentation of alternatives ▪ Use of visualization
	Case Study Exercise Part III (20 minutes)	▪ Solutions identification ▪ Packaging alternatives ▪ Design development
	Group Reports on Part III Exercise (20 minutes)	▪ Open discussion ▪ Actual project results

	Modules	Module Topics/Learning Objectives
	Module 6: Assessment of Operations and Safety (1 hour, 35 minutes)	▪ Functional Classification ▪ Design Process ▪ Evaluation of Operations ▪ Evaluation of Safety
	Case Study Exercise Part IV (20 minutes)	▪ Evaluate quantitative safety implications ▪ Evaluate justification for design deviations
	Group Reports on Part IV Exercise (20 minutes)	▪ Open discussion
	Overview of Risk Management and Tort Liability (1 hour, 20 minutes)	▪ Risk management processes and procedures ▪ Design deviations and documentation
	Context Sensitive Design Case Examples (30 minutes)	▪ Review of cases and example applications
	Organizational Requirements to Implement Context Sensitive Solutions (45 minutes)	▪ Barriers/opportunities discussion ▪ Open discussion ▪ Closure of Workshop

ILLINOIS:
CSS Approach Course

Length:
2 days

Intended Audience:
IDOT staff and contractors who will be working on the day to day activities of CSS projects

Trainers:
IDOT staff from Program Development; Design & Environment

Offered:
Ongoing
9 classes statewide to date

Materials:
Description
Manual
Case Study Background

Course Learning Outcomes

- Understand the history of CSS from the federal and state perspectives, including Public Act 93-0545
- Understand the basic principles and philosophy of CSS
- Identify projects that require CSS
- Identify and engage stakeholders
- Create a Stakeholder Involvement Plan (SIP)
- Identify and include multimodal transportation needs in the SIP
- Build consensus
- Identify the context of a project and perform a Community Context Audit
- Utilize the Departmental Policy D & E 21, and BDE Procedure Memorandum 48-06 on CSS
- Integrate aesthetics into transportation projects.
- Apply flexible design into transportation projects.
- Document the CSS project on transportation projects.

Modules	Module Topics/Learning Objectives
Module 1: Welcome	▪ Housekeeping ▪ Agenda ▪ Introductions
Module 2: CSS Approach	▪ Understand the history of CSS from the federal and state perspectives, including Public Act 93-0545 ▪ Utilize the Departmental Policy D & E 21, and BDE Procedure Memorandum 48-06 on CSS ▪ Understand the basic principles and philosophy of CSS
Module 3: Planning and Programming	▪ Overview of Planning ▪ Identify projects that require CSS ▪ Funding ▪ Local Agencies participation in CSS projects ▪ Project Study Group
Module 4: Stakeholders Involvement Plan	▪ Identify and engage stakeholders ▪ Create a Stakeholder Involvement Plan (SIP) ▪ Identify and include multimodal transportation needs in the SIP ▪ Build consensus
Module 5: Context	▪ Context Definition ▪ Context Information Leads to Better Design ▪ Eight Key Context Issues ▪ Visible/Invisible Context ▪ Context Assessment Audit
Module 6: Developing the Problem Statement	▪ Initial Public Meeting ▪ Stating the Problem ▪ Importance of the Problem Statement
Module 7: Alternatives Analysis	▪ Defining Alternatives ▪ Involve the public ▪ Building Consensus

	Module 8: Flexibility in Design	▪ Apply flexible design into transportation projects ▪ Safety ▪ Introduction to Geometric Design ▪ Design Exceptions
	Module 9: Aesthetics	▪ Integrate aesthetics into transportation projects ▪ What is Aesthetics? ▪ Why is Aesthetics important? ▪ How Aesthetics are incorporated as part of basic design. ▪ Visual Impact Mitigation through Design Elements.
	Module 10: Final Alternative and Phase 2	▪ Final Meetings ▪ CSS Land Acquisition & Design
	Module 11: Construction and Operations	▪ Constructability and Operability Experts ▪ Continuing Stakeholder Involvement ▪ Context Information ▪ Context Elements
	Module 12: Tort Liability	▪ Documentation
	Module 13: Final Words	

KENTUCKY:
Context Sensitive Design: Thinking Beyond the Pavement

Length:
2 days

Intended Audience:
Mid-level DOT staff and consultants working with CSS projects

Trainers:
Kentucky Transportation Center

Offered:
As requested nationwide
23 classes in Kentucky
24 classes in other states

Materials:
Slides

Modules	Module Topics/Learning Objectives
Background, Introductory Comments, Overview of CSS (1 hour, 30 minutes)	Workshop Purpose and Learning Objectives: ▪ To introduce the concept and demonstrate the process of "context-sensitive" highway design ▪ To experience the process through a complex case study project.
Facilitated Communication and Public Involvement Part I (45 minutes)	▪ Building a multidisciplinary project team ▪ Individual skills and team skills ▪ Purpose and need statements (group exercise) ▪ Video: More than one right answer
Environmental Issues and Context-Sensitive Design (1 hour, 30 minutes)	▪ Evolution of the PD Process ▪ FHWA NEPA Process ▪ The natural environment ▪ The human environment ▪ How does all this affect decision-making?
Guiding Principles Exercise (30 minutes)	Group exercise
Facilitated Communication and Public Involvement Part II (30 minutes)	▪ Communication: listening, visualization, facilitation ▪ Examples of collaboration on projects ▪ Ways to get public input: citizen advisory committee, informational meeting, charrette, neighborhood focus groups, structured public involvement ▪ Keeping the trust
Public Involvement Activity and Presentation (1 hour, 30 minutes)	Groups develop public involvement plan in case study exercise
Design Guidelines (1 hour, 15 minutes)	▪ Safety and roadway design ▪ Design principles
Liability Issues (1 hour, 30 minutes)	▪ Liability: definitions and background ▪ Status of Tort Liability ▪ Example cases related to highway design ▪ Design exception process ▪ Recommendations to reduce potential liability ▪ Case Study exercises
Design Issues Part II, Aesthetics (30 minutes)	▪ Fit between roadway & physical / social environment ▪ Attention to roadway "edges" ▪ Concentration to details ▪ View from the road and of the road
Case Study Design (1 hour)	Group exercise: ▪ Task 1- Route Selection ▪ Task 2- Design Elements ▪ Task 3- Presentation Preparation

	Modules	Module Topics/Learning Objectives
	Team Design Presentations, "Best Route" Selection (1 hour, 30 minutes)	Group presentations
	Summary Discussion of Context Sensitive Design (15 minutes)	▪ What Have We Learned About Context-Sensitive Design? ▪ When Do We Use Context-Sensitive Design? ▪ How Has the Project Development Process Changed? ▪ Benefits of Proactive Posture ▪ Personal Challenges ▪ How to Integrate Context-Sensitive Design into Project Development?

MAINE:
CSS for Stakeholders

Length:
1 day

Intended Audience:
Staff from local agencies and DOT

Trainers:
Consultants (Project for Public Spaces and Oldham Historic Properties)

Offered:
Ongoing
1 pilot class to date

Materials:
Agenda
Manual

Overall goals for the CSS training program	
▪ How to look at transportation projects holistically and define problems and solutions to incorporate environmental and community elements; ▪ How to engage and partner with communities and other stakeholders to solve transportation problems in mutually beneficial ways; ▪ How to use technical design and professional judgment to accommodate environmental and community values while preserving mobility and safety; ▪ How to integrate the practice of context sensitive solutions into the project delivery process.	
Modules	**Module Topics/Learning Objectives**
Introduction and CSS Orientation (45 minutes)	
Module 1: "How to Look at a Place" Including site visit and group exercise (3 hours)	▪ The concept of Place and how to apply it to a transportation project; ▪ How to recognize the key elements of a place as the context for a transportation project; ▪ How to work collaboratively with other stakeholders to identify the problems and opportunities of a place; ▪ How to develop a problem statement that includes transportation, environmental, and community components and can be used as a basis for a statement of purpose and need.
Lunch	▪ MEDOT presentation of examples
Module 2: "Respectful Communications, Consensus-Building, and Public Involvement" (1 hour, 30 minutes)	▪ Communications needs underlying the qualities and characteristics of context sensitive solutions; ▪ Listening and communication skills; ▪ Public involvement techniques that help build partnerships; ▪ How to identify and engage stakeholders; ▪ How to build consensus around a problem statement and a project vision.
Module 3: "Designing in a CSS Environment" (45 minutes)	▪ How to create design criteria that will be used to evaluate alternatives and measure project success; ▪ How to use design flexibility to provide for safety and avoid liability; ▪ How to create a conceptual design that addresses the design criteria and provides a consensus solution.
Module 4: "Putting It All Together: The CSS Project Delivery Process" (1 hour, 15 minutes)	▪ How CSS relates transportation and land use decisions to create a balanced approach; ▪ The six-step CSS Project Delivery Process; ▪ Where and how the CSS techniques taught in Modules 1-3 fit into the six-step process; ▪ Why to use a CSS process.

MINNESOTA:
Design Excellence Through Context Sensitive Solutions

Length:
2 days

Intended Audience:
65% MNDOT staff and 35% others, including a broad cross-section of consultants and stakeholders (local and tribal governments, external agencies, elected officials and citizen activists)

Trainers:
Minnesota Center for Transportation Studies, Consultants (Zan Associates)

Offered:
To be offered starting spring 2009.
A previous version was offered 7 times from 2000 to 2004

Materials:
Agenda

Workshop Goal and Objective

Goal: Enable participants to plan and design a transportation facility so that it fits its physical, cultural, social and environmental setting and is recognized as an asset by the community in which it is located.
Objective: Further build upon the knowledge and skills of participants as necessary to integrate Context Sensitive Design & Solutions (CSD&S) philosophy and principles into the project development process and to apply the principles so that projects 1) are more responsive to communities and stakeholders, 2) attain a level of project excellence, 3) leave a positive and enduring public works legacy, and 4) are developed in a timely and cost-effective manner.

Modules	Module Topics/Learning Objectives
Introduction/Welcome (45 minutes)	▪ Participants understand workshop goals and expectations for workshop ▪ Introductions
The Business Case for CSS (45 minutes)	▪ Participants understand how CSS fits into Mn/DOT's business model and to the national transportation picture.
Principles of CSS (1 hour)	▪ Participants understand concept of placemaking, elements of context, and the importance of community objectives. ▪ Discuss overall principles of Context Sensitive Solutions.
Design Workshop Session A (1 hour, 30 minutes)	▪ Teams identify contextual elements, problems to be solved, key stakeholders and team members for a design case study. ▪ Participants practice writing purpose and need statement.
Achieving Community Objectives Thru Design (1 hour)	▪ Participants understand the concepts of design flexibility, concepts related to driver and vehicle behavior, and need to consider network and alignment alternatives as well as curb-to-curb design alternatives. ▪ Participants understand the value of the design exception process, the limits of tort liability and the need for documentation.
Design Workshop Session B (1 hour, 30 minutes)	▪ Teams begin identifying design options for design case study (alignments, cross-sections, etc.)
Public and Interagency Participation in CSS (45 minutes)	▪ Participants discuss involving communities and key stakeholders in defining the problem, articulating objectives, assessing the trade-offs and developing the design. Homework assignment.
Feedback from Homework Assignment (1 hour)	▪ Participants share observations from homework assignment reflecting CSS principles.
Designing Complete Streets (1 hour)	▪ Participants understand the needs of various modes of travel, the concept of "complete streets", and the design trade-offs that must be considered.
Design Workshop Session C (1 hour, 30 minutes)	▪ Teams determine modal priorities for the design case study and reassess design options based on modes and community objectives; continue to develop alignment and cross-section alternatives.
Aesthetics and Landscape Architecture (1 hour)	▪ Participants understand the Mn/DOT visual impact assessment process and discuss concepts related to materials, architectural treatments, landscaping, construction and maintenance.
Design Workshop D (1 hour, 30 minutes)	▪ Teams identify materials, aesthetic details, and landscape treatments for design case study. ▪ Teams evaluate the effectiveness of their overall design in meeting community objectives.
Evaluating the Effectiveness of CSS – Case Study Presentations (45 minutes)	▪ Teams present case studies developed in design workshops. ▪ Group discussion of effectiveness in meeting community objectives and principles of CSS.

MINNESOTA: Context Sensitive Design & Solutions for Local Governments

Length:
1 day

Intended Audience:
City engineers, design technicians, planners, managers, and landscape architects; staff from the State Aid Office

Trainers:
Minnesota Center for Transportation Studies, Consultants (Zan Associates)

Offered:
As needed
4 or 5 classes to date

Materials:
Manual

Workshop Goal and Objective	
Goal: Enable participants to plan and design a transportation facility so that it fits its physical, cultural, social and environmental setting and is recognized as an asset by the community in which it is located. Objective: Further build upon the knowledge and skills of participants as necessary to integrate Context Sensitive Design & Solutions (CSD&S) philosophy and principles into the project development process and to apply the principles so that projects 1) are more responsive to communities and stakeholders, 2) attain a level of project excellence, 3) leave a positive and enduring public works legacy, and 4) are developed in a timely and cost-effective manner.	
Modules	**Module Topics/Learning Objectives**
Introduction and Welcome	
Mn/DOT Introduction	
What is Context?	
Introduction to Design Workshop	
Design Workshop Session A: Defining the Context	
District Engineers Panel	
The "Think" Method of Design	
Design Workshop Session B: Alignment	
Walking Tour of Excelsior Boulevard	
Creative Engineering	
Design Workshop Session B continued	
Edge and System Relationships	
Aesthetics and Landscape Architecture	
Design Workshop Session C: Cross-Section	
Public Involvement	
Putting it All Together	
Design Workshop D: Aesthetics	
Getting it Built	
Presentation of Working Case Studies	
Closing Comments	

NATIONAL HIGHWAY INSTITUTE: Introduction to CSS

Length:
3 days

Intended Audience:
The target audience is broad and includes staff from Federal, State, and local highway and transportation agencies; consulting firms, private industry, universities, and other national and international entities engaged in any aspect of the planning, design, construction or management of transportation projects.

Trainers:
National Highway Institute

Offered:
As requested nationwide
Major course revisions are underway (this description is for the existing course)

Materials:
Overview
Agenda
Slides

Overall Course Objectives

Upon completion of the course, participants will be able to:

- Explain the philosophy of CSS and its associated benefits
- Express the importance of effective and timely decision making by ensuring the early and continuous involvement of all project stakeholders
- Explain why a structured decision process can increase the chances of project implementation
- Explain the flexibility afforded in applying industry design standards (e.g., AASHTO "Greenbook") while maintaining or improving roadway safety performance
- State the importance of achieving environmental sensitivity
- Describe best practices for maintaining Context Sensitive during construction and maintenance
- Discuss why aesthetics and community values are an integral part of a good transportation project design
- Explain the linkages among transportation planning, safety, design, operations in relation to CSS
- Identify stakeholders and their role in the CSS process
- Describe the tools and techniques available to obtain consensus among stakeholders

Modules	Module Topics/Learning Objectives
Lesson 1: Course Introduction (15 minutes)	▪ Introduce instructors and participants ▪ Introduce participant workbook ▪ State course goals and outcomes ▪ Establish course ground rules
Lesson 2: CSS Framework and Principles (30 minutes)	▪ Define context sensitive solutions ▪ Describe the origin and history of CSS ▪ Identify the CSS vision
Lesson 3: CSS in Planning and Programming (30 minutes)	▪ Describe the basic inputs to and outcomes of the planning and programming process ▪ Discuss context sensitive considerations in the planning and programming states of project development
Lesson 4: Collaborative Stakeholder & Public Involvement (1 hour, 15 minutes)	▪ Explain how to identify project context and potential stakeholders ▪ Discuss when to involve stakeholders ▪ Describe ways to involve stakeholders
Lesson 4A: Case Study Exercise (Stakeholders and Issues) (40 minutes)	
Lesson 4B: Group Reports on Exercise (20 minutes)	
Lesson 5: Environmental Considerations (40 minutes)	▪ Describe the relationship between NEPA and CSS ▪ Discuss the primary steps of the environmental process ▪ Discuss the appropriate level of environmental analysis at various stages of the project devt process
Lesson 6: Structured Decision Making (Part I) (50 minutes)	▪ Explain why a structured decision process can increase the chances of project implementation ▪ Describe key to managing a structured decision process
Lesson 7: Structured Decision Making (Part II) (1 hour)	▪ Explain how the Multi-attribute Utility Analysis process can be used to compare transportation alternatives ▪ Discuss the differences between natural and constructed scales in comparing performance measures ▪ Describe how the MUA process can be used to identify factors driving a project decision
Lesson 7A: Case Study Exercise (Evaluation Criteria and Weights) (40 minutes)	

Exercise – Urban Exercise – Suburban Exercise – Rural Website	Lesson 7B: Group Reports on Exercise (20 minutes)	
	Lesson 8: Group Facilitation & Conflict Resolution (1 hour)	▪ Describe stages of group facilitation ▪ Discuss ways to overcome problems and conflicts during group meetings
	Lesson 9: Alternatives Development (1 hour)	▪ Understand and reinforce the relationship of transportation alternatives to the identified problem ▪ Understand design creativity ▪ Discuss principles of development and portrayal of alternatives
	Lesson 9A: Case Study Exercise (Strategy Table) (30 minutes)	
	Lesson 9B: Group Reports on Exercise (20 minutes)	
	Lesson 10: Design Considerations (1 hour, 30 minutes)	▪ Discuss choices made during design and how those choices influence the form and character of a roadway project ▪ Describe the basis behind design parameters used in AASHTO policy
	Lesson 11: Assessment of Traffic Operations (40 minutes)	▪ Review terminology and methods for evaluating traffic operational quality ▪ Understand concepts of safety and applications of methods to evaluate safety effects of decisions ▪ Gain exposure to latest technology (tools and techniques) for developing safe and feasible solutions: accident prediction models and speed consistency models
	Lesson 12: Assessment of Roadway Safety (1 hour, 30 minutes)	▪ Discuss varying perceptions of traffic safety ▪ Discuss methods for framing safety discussions with stakeholders ▪ Introduce tools and techniques for evaluating substantive safety ▪ Highlight best practices in addressing traffic safety issues
	Lesson 12A: Case Study Exercise (Roadway Safety) (30 minutes)	
	Lesson 12B: Group Reports on Exercise (15 minutes)	
	Lesson 13: Risk Management & Tort Liability (45 minutes)	▪ Gain perspective on the issue of risk management and CSS ▪ Learn fundamentals of tort liability related to highway design decisions ▪ Understand how to manage the risk of applying design exceptions ▪ Review "best practices" for design and their relationship to risk management
	Lesson 13A and B: Case Study Exercise (Alternative Scoring) (30 minutes)	
	Lesson 14: CSS During Construction & Maintenance (30 minutes)	▪ Describe construction and maintenance issues that are often important to project stakeholders ▪ Describe best practices for maintaining context sensitivity during construction and maintenance activities
	Lesson 15: Case Examples (45 minutes)	▪ Review applications of CSS principles on a range of transportation projects
	Lesson 16: Organizational Change (45 minutes)	▪ Identify driving forces and barriers to implementation of CSS
	Test & Wrap Up Session (30 minutes)	

NATIONAL TRANSIT INSTITUTE: CSS in a Multimodal Environment **Length:** 3 days **Intended Audience:** Attendees are determined by the host agency, but typically include all functional areas and some consultants or stakeholders **Trainers:** Consultants (DMJM+Harris) **Offered:** As requested nationwide 6 classes to date **Materials:** Outline Website	**Modules**	**Module Topics/Learning Objectives**
	Segment 1: Introduction **TOPIC 1:** CSD – the New Paradigm for Project Planning and Design (25 minutes)	**Topic Objective:** Introduce course, introduce instructors and participants, introduce CSD, determine participant knowledge level and establish working environment for the group 1.0 Welcome (5 minutes). 2.0 Introduction to CSD (15 minutes). 3.0 Course Overview (5 minutes).
	TOPIC 2: An Overall Framework (40 minutes)	**Topic Objective:** Provide historic and national background and basic framework of CSD, define how it works as a tool. 1.0 We are not alone – a national institutional and professional movement (20 minutes). 2.0 What's it all about? What's different? How affect my role or work in transportation? (15 minutes).
	Segment 2: Understanding Context **TOPIC 3:** Community – every project has a host (4 hours)	**Topic Objective:** Define community context in a CSD project development process, including community characteristics and outreach techniques. 1.0 Definition – what is community? (20 minutes). 2.0 Measuring attributes and qualities – community-wide and neighborhood techniques (50 minutes). 3.0 Exercise Part I: Data set exercise – teams of six: Route 18, New Bedford (35 minutes). 4.0 Outreach – moving beyond the numbers alone (45 minutes). 5.0 Documenting "places" - the next level of investigation (45 minutes). 6.0 Results – a multidimensional picture of the community. 7.0 Presentation – from all sources, summaries, charts, maps of community assets, the value of each and needs, issues, opportunities. 8.0 Exercise Part II: Carry results of data assessment to design an outreach plan for the project – provide information about transportation problem/objectives and more on context (20 minutes).
	TOPIC 4: Environment – beyond NEPA (2 hours, 30 minutes)	**Topic Objective:** Identify environmental issues/legislation, how it can relates to CSD and how to work beyond NEPA toward enhancement opportunities. 1.0 What Environmental Regulations Apply? (10 minutes). 2.0 Documentation Requirements (10 minutes). 3.0 Moving from Current Practice (25 minutes). 4.0 Examples of Multiple Use Improvements (15 minutes). 5.0 Identifying Environmental Resources (25 minutes). 6.0 Constraints/opportunities (10-14 minutes). 7.0 Enhancement – more than management and preservation (10-12 minutes). 8.0 Workshop in small groups to close (45 minutes to 1 hr).
	TOPIC 5: Understanding transportation (3 hours)	**Topic Objective:** Identify and assess the transportation context and issues and their role in a CSD project development process for problem solving. 1.0 History of transportation since World War II – What happened that led to today's transportation system and problems? (10 minutes). 2.0 Public Health, Community Planning and Transportation Design (5 minutes). 3.0 Inventory of needs of all users of each facility type (15 minutes). 4.0 System context (40 minutes). 5.0 Identifying transportation needs in CSD (15 minutes). 6.0 System/facility performance – all modes, for all users (30 minutes). 7.0 Design flexibility (15 minutes).

	Modules	Module Topics/Learning Objectives
		8.0 CSD throughout the full project development process – problem identification to ribbon cutting (45 minutes)
	Segment 3: Applying Design Flexibility **TOPIC 6:** Synthesis & Integration (1 hour, 15 minutes)	**Topic Objective:** Present approaches and issues in combining of previous topics and their elements not an integrated CSD project development process. 1.0 CSD/CSS is finding, creating, achieving common ground; a process for making effective decisions (4 minutes). 2.0 Illustrate process of decision-making apart from those affected -- "Decide, Design, Defend Approach" (3 min). Illustrate process of decision-making with those affected -- "Listen, Design, Build Approach" (3 min). 3.0 CSD/CSS is a collaborative, multi-disciplined, team approach, which engages those affected in an effective decision-making process (20 minutes). 4.0 Engage participants in small group exercise, break into groups for (6 individuals/group) (45 minutes). 5.0 Ten ways to gain credibility (source: PennDOT Public Involvement Handbook) (10 minutes)
	TOPIC 7: The Skill Set(s) (1 hour)	**Topic Objective:** Identify and develop essential transferable skills that can be used to implement a CSD project. 1.0 Effective communication (10 minutes). 2.0 Consensus building (15 minutes). 3.0 Negotiation/mediation (5 minutes). 4.0 Team building (10 minutes). 5.0 Interactive exercise (40 minutes).
	TOPIC 8: The Empowered Designer (3 hours)	**Topic Objective:** Translate the CSD process from external ownership and partnership around objectives, trade-offs and problem solving to the project elements that provide the designer with the opportunity, the call for design innovation and excellence. 1.0 Design Flexibility – before the Green book, now and beyond (30 minutes). 2.0 Professional Liability Issues (30 minutes). 3.0 Context Sensitive Design (CSD) does not compromise standards or safety (20 minutes). 4.0 Environmental Enhancement needs to employ "Creative Thinking (25 minutes). 5.0 Traffic Calming – a family of alternative design strategies and tools (30 minutes). 6.0 Empowering the Designer - defining and attaining excellence (45 minutes).
	TOPIC 9A: A to Z case study – Roadway (3 hours)	**Topic Objective:** Incorporate all previous topics and have participants develop a clear understanding of project context elements and their relationship to project purpose and project design. **Case Study:** Soquel Avenue, California **Workshop Format:** Break class into five groups of 7 members in each group (assume 35 attendees) 1.0 Understanding Context (40 minutes) 2.0 Analysis & Impacts (45 minutes) 3.0 Solutions: Alternatives and Trade-offs (60 minutes) 4.0 Review Alternatives (30 minutes) 5.0 Actual Outcome (5 minutes)
	TOPIC 9B: A to Z case study - Transit (3 hours)	**Topic Objective:** Drawing on all previous course topics, have participants develop a clear understanding of project context elements and their relationship to project purpose and project design. **Case Study:** Light Rail Station, New Jersey **Workshop Format:** Break class into five groups of 7 members in each group (assume 35 attendees) 1.0 Understanding Context (45 minutes) 2.0 Analysis & Impacts (45 minutes) 3.0 Solutions: Alternatives and Trade-offs (60 minutes) 4.0 Review Alternatives (25 minutes)

NEW HAMPSHIRE:
CSS Basic Course

Length:
2 days

Intended Audience:
50% DOT staff from all functional areas, 50% consultants and other agencies (state and federal)

Trainers:
Consultants (Oldham Historic Properties, Project for Public Spaces, Warne & Associates)

Offered:
Ongoing
10 classes statewide to date

Effective Techniques:
Field Trip

Materials:
Agenda
Slides
Learning Objectives

Overall goals for the CSS Training Program:

- How to look at transportation projects holistically and define problems and solutions to incorporate environmental and community elements;
- How to engage and partner with communities and other stakeholders to solve transportation problems in mutually beneficial ways;
- How to use technical design and professional judgment to accommodate environmental and community values while preserving mobility and safety;
- How to integrate the practice of context sensitive solutions into the project delivery process.

Modules	Module Topics/Learning Objectives
Welcome and CSS Orientation (Goals and Overview) (1 hour)	
Module 1: How to look at a place Site Visit Exercise: Problem Statement (2 hours, 50 minutes)	▪ The concept of Place and how to apply it to a transportation project; ▪ How to recognize the key elements of a place as the context for a transportation project; ▪ How to work collaboratively with other stakeholders to identify the problems and opportunities of a place; ▪ How to develop a problem statement that includes transportation, environmental, and community components and can be used as a basis for a statement of purpose and need.
Module 2: Respectful Communication, Consensus Building, and Public Involvement Exercise: Visioning Exercise: Public Involvement Techniques (2 hours, 45 minutes)	▪ Communications needs underlying the qualities and characteristics of context sensitive solutions; ▪ Listening and communication skills; ▪ Public involvement techniques that help build partnerships; ▪ How to identify and engage stakeholders; ▪ How to build consensus around a problem statement and a project vision.
Lunch- Powerpoint Presentation (20 minutes)	▪ CSS at NHDOT presented by Chief of Preliminary Engineering
Module 3: Designing in a CSS Environment Exercise: Design Criteria (3 hours, 30 minutes)	▪ How to create design criteria that will be used to evaluate alternatives and measure project success; ▪ How to use design flexibility to provide for safety and avoid liability; ▪ How to create a conceptual design that addresses the design criteria and provides a consensus solution.
Module 4: Putting it all Together Exercise: CSS Integration (3 hours)	▪ How CSS relates transportation and land use decisions to create a balanced approach; ▪ The six-step CSS Project Delivery Process; ▪ Where and how the CSS techniques taught in Modules 1-3 fit into the six-step process; ▪ Why to use a CSS process.
Module 5: Taking it Home (30 minutes)	▪ Identify and share individual action plan tasks for integrating CSS in participant's work

NORTH CAROLINA: CSS Basic Course **Length:** 3 days **Intended Audience:** DOT staff from all functional areas, environmental resource agencies, local governments, MPO and RPO staff, consultants **Trainers:** North Carolina State University Center for Transportation and the Environment **Offered:** Ongoing, 3 to 4 per year 53 classes statewide to date **Effective Techniques:** Quality of Life exercise **Materials:** Manual Facilitator's Guide Role Play List Website	**Modules**	**Module Topics/Learning Objectives**
	Module 1: Welcome/ Overview Key Messages (1 hour, 35 minutes)	▪ What is CSS? (CSS principles) ▪ Why is NCDOT implementing it? ▪ Why are you here?
	Module 2: Quality of Life Consensus Workshop (1 hour, 10 minutes)	▪ Identify elements of a good quality life. ▪ Use group facilitation method to achieve consensus on these elements. ▪ Demonstrate the connections between transportation decision-making and its effect upon communities' quality of life.
	Module 3: Defining Context (1 hour)	▪ Decision-making criteria are expanded to address the transportation need, be an asset to the community, and be compatible with the natural and human environment. ▪ Defining context is based on community values and the communities' vision for the future. ▪ Understanding context is the most important information needed to meet transportation needs.
	Module 4: Transportation Decision-Making (1 hour, 45 minutes)	▪ Meet a transportation need (Principle) ▪ Be a community asset (Principle) ▪ Be compatible with the natural and human environment (Principle) ▪ Comprehensive, up-front identification of context ▪ Linked decision-making ▪ Early and often stakeholder involvement ▪ Supportive multi-disciplinary teams ▪ Comprehensive documentation
	Exercise #1 Identifying Issues: Context Screening Tool/Class discussion (1 hour, 15 minutes)	▪ introduction to use of screening tools ▪ identification and documentation of non-transportation information ▪ defining local context and identifying issues ▪ linking particular issues with potential stakeholders
	Module 5: Stakeholder Involvement Considerations (1 hour, 30 minutes)	▪ Involvement from ALL ▪ Meaningful participation ▪ Good communication skills ▪ Use internal and external resources to identify stakeholders ▪ Use information from stakeholders for decisionmaking
	Exercise #2: Identifying Stakeholders and Involvement Techniques (1 hour)	▪ understanding other points of view ▪ understanding that transportation-related issues involve more than "purpose and need"
	Module 6: Environmental Considerations (1 hour)	▪ Increase awareness of environmental statutes and regulations ▪ Increase awareness of how transportation affects the natural and human environment ▪ Act as stewards of the human and natural environment
	Exercise #3: Problem Definition Consensus & Exercise #4 Project Vision Consensus (1 hour, 30 minutes)	▪ Creating a common vision encompassing diverse points of view ▪ Incorporating and balancing transportation need, being a community asset and compatibility ▪ Altering transportation infrastructure to fit the human and natural environment

	Modules	Module Topics/Learning Objectives
	Module 7: Construction and Maintenance (1 hour, 45 minutes)	▪ How to apply the CSS decision-making approach to construction and maintenance activities. ▪ How can the maintenance work be done with minimum impacts to the look and feel of the community? ▪ How can the community look and feel be improved through this maintenance project. ▪ Remember to be a good neighbor ▪ Promises made: Promises kept
	Module 8: Legal Benefits (30 minutes)	▪ DOES NOT increase tort liability for NCDOT or individual employees when properly applied & documented ▪ An excellent way to reduce likelihood of environmental challenge lawsuits (injunctions sought) ▪ Never eliminates 100% "perceived" injury or society's litigious attitudes
	Module 9: Design Criteria (1 hour)	▪ Know what the "problems are" ▪ Use NOT ONLY Safety & Efficiency considerations in making design choices ▪ Accommodation of uses ▪ User behavior ▪ Constructability, Operability, Maintainability ▪ Don't choose a design because "it is the way it has always been done" ▪ Non-traditional choices can be safe choices
	Module 10: Design Flexibility (1 hour)	▪ Use the full range of design choices ▪ Don't shy away from innovations or exceptions with mitigation if they work ▪ Make sure the facility is constructible, operable, maintainable ▪ Achieve scale and "fit"
	Module 11: Thinking Beyond the Pavement (40 minutes)	▪ The Different aspects of looking beyond the pavement ▪ Natural Environment ▪ Human Environment ▪ Changing "Old" Perceptions of An Engineer's Aesthetics
	Exercise #5 Developing Evaluation Criteria/ Group Presentations (1 hour, 10 minutes)	▪ Creating evaluation criteria incorporating transportation and non-transportation elements
	Exercise #6 Solution Consensus (2 hours)	▪ Consensus building with a diverse range of stakeholders and points of view ▪ Use of a project vision and evaluation criteria incorporating non-transportation elements ▪ Context sensitive problem solving
	Class Presentations, Discussion on Solutions (20 minutes)	
	Module 12: Summary (45 minutes)	▪ Listen empathically, communicate effectively ▪ Collaborate and build consensus ▪ Involve stakeholders early and often ▪ Team with all disciplines ▪ Link the decision-making process ▪ Be flexible and open-minded ▪ Honor commitments and promises ▪ CSS principles

TENNESSEE:
CSS Basic Training

Length:
2 days

Intended Audience:
70% TDOT staff from all functional areas, 30% consultants, resource agencies, MPOs and RPOs, partner groups

Trainers:
Three TDOT instructors – CSS coordinator, Deputy Chief Engineer, Deputy Chief of Environment and Planning

Offered:
Ongoing, bi-monthly

Effective Techniques:
Context Screening Tool to assist with developing a CSS problem statement; Graphic of Project Delivery Process to communicate CSS concepts holistically

Materials:
Agenda
Slides
Learning Objectives

Overall Course Training Goals

- To understand the framework, principles and benefits of CSS to TDOT and TDOT's partners;
- To understand concepts of context and place and how to apply them to a transportation project;
- How and when to incorporate CSS in each functional area (i.e. how to be flexible and what tools are available);
- To understand the roles and importance of stakeholders and how to facilitate effective public involvement.

Modules	Module Topics/Learning Objectives
Module 1: Welcome/Introduction (1 hour)	• Define CSS and understand the principles of CSS • Learn how and why TDOT is using CSS (Benefits) • Discuss myths about CSS ▪ Develop a basic understanding of what is expected from participants in using CSS
Module 2: Defining Context: Understanding A Place & Identifying Problems (2 ¾ hours)	• Learning objectives (5 min.) • Intro to context-small and large photo exercise (10 min.) • Context, Context Audit and Problem Statement Discussion (60 min.) • Break (10 min) • Context Audit Exercise (20 min) • Develop Problem Statement exercise (40 min) • Report out (30 min) ▪ Module summary (5 min)
Module 3: Respectful Communications, Consensus Building & Public Involvement (3 hours)	• Learning objectives • Respectful communication, consensus building, team building • Identifying, recruiting and engaging stakeholders • Vision statements • Develop Vision Statement exercise • Public involvement at TDOT • Public Involvement Plans • Choosing public involvement techniques • Choosing public involvement techniques exercise ▪ Module summary
Module 4: CSS Decision-Making &Project Delivery Process (2 hours)	▪ CSS Decision-making ▪ Bridge chart ▪ Developing evaluation criteria for decision-making ▪ Exercise: Develop evaluation criteria

	Module Topics/Learning Objectives	Modules
	Module 5: Design Flexibility & Liability (3 hours)	• Alternatives-based approach to design • Design guidance • Inputs into design • Main components of design • Exercise to apply design criteria to components of case study • Lunch • Risk management and liability • Approach to evaluating alternatives ▪ Module Summary
	Module 6: Putting It All Together (1 ½ hours)	• Flexibility across all functional areas • Teamwork and team building; functioning of interdisciplinary teams • Roles of construction and maintenance team members • Implementing Public Involvement Plans • Ensuring continuity of commitments/ tracking commitments • Break • How does CSS change your job? Exercise • Develop individual CSS action plans • Report out ▪ Module Summary
	Wrap-Up (15 minutes)	• Summary session ▪ Share elements of individual action plans

PENNSYLVANIA:
CSS Basic Course

Length:
2½ days

Intended Audience:
DOT staff from all functional areas, MPO and RPO staff, county staff; mandatory for designers

Trainers:
Consultants (JMT) and PennDOT staff

Offered:
Ongoing, twice per year
12 classes statewide to date

Materials:
Agenda

Modules	Module Topics/Learning Objectives
Module 1: What are Context Sensitive Solutions? (2 hours, 15 minutes)	▪ Introduction and Overview of Training Topics ▪ PENNDOT Policy on CSS, Related initiatives and review of CSS website and featured projects ▪ Overview of project development process ▪ Planning and programming
Module 2: Placemaking, Visioning, and Defining Context (1 hour, 30 minutes)	▪ Definition of place and principals of placemaking ▪ How to defines community context and scoping ▪ Community visioning techniques ▪ Review of community context audit process
Module 3: Consensus Building/ Public and Stakeholder Involvement (1 hour)	▪ Community's role in CSS ▪ Approach to consensus building ▪ Engaging the public in CSS ▪ Methods in community outreach
Module 4: Flexibility in Design in the Context of the Community (1 hour)	▪ Knowing when to apply flexible design standards
Module 5: Case Study Overview, Organization, and Instructions (1 hour)	▪ Case study example and review of case study materials ▪ Review of community context audit form
Module 6: Case Study Activity (2 hours)	▪ Interactive group activity, local site visits, group role playing, community context audit and scoping field view
Module 7: Case Study Activity (1 hour, 45 minutes)	▪ Group consensus on community context audit findings and scoping (role playing) ▪ Discussion of key issues and preliminary vision ▪ Identification of key stakeholders and public involvement program ▪ Prepare group presentations ▪ Group presentation of Purpose and Need/Public Involvement Program
Module 8: Flexibility in Design Standards and Criteria- Design Tools (2 hours)	▪ Examples of flexibility in design standards and criteria ▪ Functional classification, LOS, design speeds, lane widths, safety ▪ Traffic calming and roundabouts ▪ Architectural treatments of barriers/structures ▪ Designing for bicycles and pedestrians
Module 9: Construction Specifications, Cost & Maintenance (45 minutes)	▪ Construction specifications and cost ▪ Maintenance
Module 10: Case Study Activity (2 hours)	▪ Identifications and evaluation of CSS solutions ▪ Consensus building (role playing) and identification of recommended solution ▪ Modification of public involvement program ▪ Preparation of presentation (Presentation boards and case study presentation) ▪ Case study presentations
Module 11: Tort Liability/Legal Issues (45 minutes)	▪ Tort liability/legal issues (presentation and group discussion) ▪ Discussion of example and possible legal issues associated with case study solutions
Module 12: Course Wrap-up/Examination (1 hour, 15 minutes)	

WASHINGTON:
CSS Basic Course

Length:
2 days

Intended Audience:
50% state DOT staff from all functional areas, 50% local and regional DOT and others (e.g. tribal and environmental groups, consultants and contractors)

Trainers:
Consultants (CH2MHill)

Offered:
2004 – 2007
10 classes statewide

Materials:
Agenda

Course Objectives	
▪ Learn and Understand Definition and Practice of Context Sensitive Solutions ▪ Become familiar with relationship between Standards, Tort & Liability, and Decision Documentation ▪ Learn how to identify Environmental & Design Considerations ▪ Practice applying CSS within a small group setting	
Modules	**Module Topics/Learning Objectives**
Introduction and History (45 minutes)	▪ Welcome / Instructor Introductions & Announcements ▪ Student Introductions / Expectations ▪ Record backgrounds of various students and what they seek in the course. ▪ "Hi"-Ball & Discussion ▪ State Course Objectives ▪ Show WSDOT Executive Order ▪ Present evolution of transportation thought from Action Era through Context Sensitive Era
Standards, Tort and Liability (60 minutes)	▪ Compare standards and design decisions with corresponding Tort implications and Liability issues ▪ Cover history and definitions pertaining to Tort & Liability ▪ Provide examples where poor design decisions or documentation resulted in adverse judgments ▪ Provide examples where good decisions and documentation resulted in successful defense against plaintiff ▪ Discuss w/ class their experiences with Tort & Liability, trials, etc.
What is Context? (30 minutes)	▪ Show a slide or board-mounted photo. Class identifies the context(s) in the photo, potential land uses, setting, scale, etc. ▪ Context from topography and natural resources ▪ Context from urban development ▪ Context from land-use and documented sources (zoning maps, etc.) ▪ Context from sense of community (Leavenworth vs. Seattle?)
Identifying Facility Users (30 minutes)	▪ Show a slide or photo. Class identifies the types of users given the context in the photo. Discuss how changes to that context could also change the way people use the facility. ▪ Pedestrian and Bicyclist Users ▪ Vehicular Users, the various needs of cars, trucks, buses, semi-trailers ▪ Whys – Utilitarian, Commercial, Agricultural, Recreational, etc.
Practical Exercise – Step 1 (30 minutes)	▪ Identify Users. Consider who might use the facility or otherwise be a stakeholder. ▪ Quick review on who potential facility users and stakeholders could be for the Practical Exercise
How do I account for Environmental Considerations & their Context? (30 minutes)	▪ Identify what environmental considerations are (the various NEPA disciplines) and when they are typically considered in the project development process. ▪ Discuss how to work with these issues, or at least plan for them. ▪ Why does the definition of 'significant' change?
Practical Exercise – Step 2 (30 minutes)	▪ Identify Environmental Considerations (30): Introduce potential environmental factors learned as a result of contacting stakeholders and regulatory agencies.

	Modules	Module Topics/Learning Objectives
	How do I account for Design Considerations & their Context? (45 minutes)	▪ Identify what a design consideration is (Design Speed, items shown in Design Matrices, etc.) ▪ Show how selection of one design element influences or dictates the selection of other design elements. ▪ Discuss Alternatives Development ▪ Discuss Amenities, Streetscapes
	Safety & Operations (30 minutes)	▪ Show the difference between Nominal and Substantive Safety ▪ Discuss trade-offs and when they are appropriate ▪ Discuss how design decisions impact maintenance and operations
	Practical Exercise – Step 3 (60 minutes)	▪ Consider conceptual design solutions
	Day 2 Introduction (30 minutes)	▪ Summary of Day 1 and how we'll apply what was learned today. Match-Game
	Structured Decision Making (60 minutes)	▪ Show how decisions need to be made using a process, criteria, and other structure – especially when groups are involved. ▪ Cover Strategy Tables, Multi-Attribute Decisions, Level 1 – Level 5, etc. ▪ Demonstrate Sensitivity – how different factors can affect which decisions are made, and how to assure that these factors represent reality
	Practical Exercise – Step 4 (45 minutes)	▪ Develop a structured decision-process to address issues identified earlier in the course. Are there any sensitive factors?
	How do I Document my Decisions? (30 minutes)	▪ Context, Users, Environment, and Design Considerations are now brought into balance by a design decision – say why. ▪ Show how documenting why this decision represents the best solution helps to protect against liability issues later. ▪ Give examples of good ways, and not so good, to document decisions.
	Practical Exercise – Step 5 (50 minutes)	▪ Document your decisions using pre-packaged reports, scratch-paper, overlays, and materials you made throughout the course. Show how it would stand up in court!
	Practical Exercise - Group Presentations (60 minutes)	
	Practical Exercise – Game (30 minutes)	▪ Jeopardy – Categories include Tort & Liability, Design, NEPA, Consensus & Controversy, etc. Class divides into three contestant-groups. Answers may require short group-discussion answers (you have 2 minutes to say, "What is …"), or on the spot answers as is common in the TV game. Groups earn points to compete for prizes (i.e. candy, etc.)
	Real Case Studies (60 minutes)	▪ Show the class what was done in real situations. Discuss differences and similarities with the Practical Exercise.
	Course Summary (30 minutes)	▪ Re-state objectives and what was covered – Discuss how this can be applied after the class

Specialized Skills Training Index	Page #	Delivery Format*	Applicability to Functional Areas							Applicability to Topics						
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DOT Training																
Arkansas: Environmental Awareness Workshop	9	🚹			✓	✓	✓	✓						✓		✓
California: Design Senior Seminar	9	🚹			✓		✓		✓	✓	✓	✓	✓		✓	
California: Landscape Architects Academy	9	🚹	✓		✓					✓	✓		✓	✓		
California: Management Training	10	🚹							✓	✓			✓		✓	
California: Managing Transportation and Land Use Interactions	10	🚹	✓	✓	✓				✓					✓		✓
California: PE Academy	11	🚹			✓	✓	✓	✓	✓	✓	✓		✓			
Colorado: Maintenance Academy	11	🚹						✓								✓
Florida: Efficient Transportation Decision Making Process Training Course	12	🚹	✓	✓	✓				✓	✓		✓	✓	✓		✓
Florida: Livable Communities Workshop	12	🚹	✓	✓	✓		✓	✓			✓			✓		✓
Florida: PD&E Manual Process Training	13	🚹		✓	✓				✓	✓		✓	✓			✓
Florida: Sociocultural Effects Training	13	🚹	✓	✓								✓	✓	✓		✓
Kentucky: Context Sensitive Solutions in Construction & Maintenance	14	🚹				✓		✓	✓			✓	✓	✓		✓
Maine: Highway Program Design Training	14	🚹			✓		✓				✓					✓
Maine: Risk Management and Tort Liability	15	🚹			✓				✓		✓					
Minnesota: Advanced Skills for Project Managers	15	🚹							✓		✓	✓	✓	✓	✓	✓
Minnesota: CSD&S Advanced Design Flexibility	16	🚹			✓				✓		✓					
Minnesota: Environmental Stewardship Workshop	16	🚹		✓					✓			✓			✓	✓
Minnesota: Essential Skills for Project Managers	16	🚹							✓	✓	✓	✓			✓	✓
Minnesota: Training for Public and Organizational Involvement in Context Sensitive Design	17	🚹	✓	✓								✓				
Minnesota: Visual Impact Assessment	18	💻	✓	✓	✓	✓	✓	✓			✓			✓		✓
New Hampshire: CSS Advanced Skills Training	18	🚹	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	

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New Hampshire: iTRaC Program	19	🧍	✓								✓					✓
New Jersey: Design Flexibility	19	🧍	✓	✓	✓						✓			✓		✓
New York: Charrette Workshop	20	🧍	✓	✓	✓					✓		✓			✓	
New York: Controversial Issues Process	20	🧍	✓	✓	✓	✓	✓	✓	✓						✓	
New York: CSS for Construction/Operations/Maintenance Personnel	20	🧍				✓	✓	✓			✓					✓
New York: Edgewater: Competing Values in a Transportation Project	21	🧍	✓	✓	✓	✓	✓	✓	✓			✓		✓	✓	
New York: Integrated Transportation Decision-making	21	🧍	✓	✓	✓		✓		✓	✓			✓		✓	
New York: Legal Issues in Design	21	🧍			✓						✓					
New York: Overview of the Project Development Process	22	🧍		✓	✓	✓	✓		✓	✓						
New York: Placemaking	22	🧍	✓	✓	✓		✓					✓		✓		✓
New York: Understanding the Existing Context	22	🧍	✓	✓	✓		✓							✓		✓
Pennsylvania: Transportation, Historic Preservation and You	23	🧍	✓	✓						✓		✓				
Tennessee: Building High Performance Teams	23	🧍	✓	✓	✓	✓	✓	✓	✓				✓			
Texas: Community Impacts	24	🧍	✓	✓	✓							✓		✓		✓
Texas: Public Involvement	24	🧍	✓	✓	✓							✓			✓	
FHWA Resource Center Training Presentations																
FHWA: CSS Briefing	25	🧍		✓	✓				✓	✓	✓	✓				✓
FHWA: CSS Management Briefing	25	🧍	✓	✓	✓				✓	✓	✓	✓	✓	✓		
FHWA: The "Contexts" of Context Sensitive Solutions	25	🧍	✓	✓	✓		✓		✓					✓		
Other Available Training																
Access Management, Location and Design	26	🧍	✓		✓		✓	✓			✓			✓		

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Accessible Pedestrian Signals	26	🧍					✓				✓					
Accounting for Cumulative Effects in the NEPA Process	26	🧍	✓	✓						✓		✓	✓	✓		✓
Adaptive Management	27	🧍		✓					✓	✓						✓
Addressing Cultural Resources in the NEPA Process	27	🧍		✓								✓	✓	✓		✓
Administration of FHWA Planning and Research Grants	27	🧍	✓											✓		
Advanced Applications of Context Sensitive Solutions	28	💻			✓				✓		✓				✓	
Advanced Negotiation Training Course for Natural Resource Professionals	28	🧍		✓								✓			✓	
Advanced Public Involvement	28	🧍	✓	✓								✓				
Advanced Seminar on Managing the Environmental Review Process	28	🧍		✓						✓		✓	✓	✓	✓	
Advanced Seminar on Transportation Project Development: Navigating the NEPA Maze	29	🧍		✓	✓				✓	✓		✓	✓	✓		✓
Advancing Transportation Systems Management and Operations	29	🧍	✓				✓				✓			✓		
Alternative Contracting	29	🧍			✓	✓	✓			✓	✓			✓		
Applying GIS and Spatial Data Technologies to Transportation	30	🧍	✓	✓						✓				✓		
Applying the NEPA Process	30	🧍		✓					✓	✓		✓	✓	✓		✓
Assessing Cumulative Impacts	30	🧍	✓	✓						✓		✓	✓	✓		✓
Basic Negotiation Training Course for Natural Resource Professionals	31	🧍		✓								✓			✓	
Best Strategies and Skills for Winning Negotiations	31	🧍	✓	✓	✓	✓	✓	✓	✓						✓	
Better Decision Making: Numerical Methods and Beyond	31	💻	✓	✓	✓	✓	✓	✓	✓	✓						
Beyond Compliance: Historic Preservation in Transportation Project Development	31	🧍	✓	✓	✓							✓		✓		✓
Bicycle and Pedestrian Transportation Planning	32	🧍	✓		✓						✓			✓		

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Bicycle Facility Design	32	🧍	✓		✓		✓				✓			✓		
Collaboration in the NEPA Process	32	🧍		✓					✓	✓		✓			✓	✓
Collaborative Decision Making Models	33	🧍	✓	✓	✓	✓	✓	✓	✓	✓						
Communication Skills: Listening	33	💻	✓	✓	✓	✓	✓	✓	✓			✓			✓	
Communications for Effective Public Participation	33	🧍	✓	✓	✓	✓	✓	✓	✓						✓	
Community Impact Analysis	34	🧍	✓	✓								✓		✓		✓
Conducting Quality Cumulative Impact Analyses under the National Environmental Policy Act (NEPA)	34	🧍	✓	✓						✓		✓	✓	✓		✓
Conflict Resolution and Negotiation Tools for Cultural and Natural Resource Projects	34	🧍		✓						✓		✓	✓		✓	
Content Analysis & Public Response Management	35	🧍		✓					✓	✓			✓		✓	
Context Sensitive Solution Challenges in the Urban Street Environment (Design Flexibility)	35	🧍			✓						✓					
Cultural Competency for Urban Planning and Development	35	🧍	✓	✓											✓	
Cumulative Effects Assessment	35	🧍	✓	✓						✓		✓	✓	✓		✓
Dealing with Difficult Behavior and Situations	36	💻	✓	✓	✓	✓	✓	✓	✓			✓			✓	
Decisionmaking for Cultural and Natural Resources in the Legal Environment	36	🧍		✓						✓		✓	✓		✓	✓
Deploying Integrated ITS - Metropolitan	36	🧍	✓				✓				✓			✓		
Designing Accessible Pedestrian Facilities in the Public Right-of-Way	36	💻			✓						✓					
Designing Bicycle Facilities	37	💻	✓		✓		✓				✓					
Designing Safe, Accessible Pedestrian Facilities	37	🧍	✓		✓						✓			✓		
Developing High-Impact Training	37	💻														
Engineer's Survival Kit: Tips for Moving Ahead and Keeping Your Head While Practicing the "Art" of Engineering	37	💻			✓		✓				✓					

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Environmental Bootcamp for Engineers	38			✓	✓				✓	✓			✓			✓
Environmental Communication for Behavior Change	38			✓								✓		✓	✓	
Environmental Conflict Management	38		✓	✓									✓		✓	
Estimating Regional Mobile Source Emissions	39		✓							✓				✓		
Evaluation of Public Participation	39		✓	✓	✓							✓				
Facilitating Action-Oriented Meetings	39		✓	✓	✓	✓	✓	✓	✓			✓	✓			
Facilitating Conciliation: Beyond Conflict Resolution	40		✓	✓	✓										✓	
Facilitating Project Excellence	40		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	
Facilitating the NEPA Process	40			✓						✓		✓	✓		✓	
Flexibility in Design: A New Way of Thinking	41				✓						✓					
Fundamentals of Project Management for Transportation Engineers	41								✓	✓						
Fundamentals of Title VI/Environmental Justice	41		✓	✓	✓					✓		✓		✓		
Geometric Design: Applying Flexibility and Risk Management	42				✓						✓					
Group Facilitation Methods	42		✓	✓	✓										✓	
How to Establish and Manage an Interdisciplinary Team	42			✓					✓				✓		✓	
How to Turn a Place Around: Creating Great Neighborhood Spaces	43		✓	✓	✓		✓				✓	✓	✓	✓		
Identification and Management of Traditional Cultural Places	43			✓								✓	✓	✓		✓
Implications of Air Quality Planning for Transportation	43		✓											✓		
Improving Pedestrian Safety at Uncontrolled Crossings	44		✓		✓		✓				✓			✓		
Improving Personal & Professional Communication	44		✓	✓	✓	✓	✓	✓	✓						✓	
Innovative Bicycle Treatments	44		✓		✓		✓	✓			✓			✓		
Instructor Development Course	45															

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Integrating NEPA with Section 106	45	🧍		✓						✓		✓	✓	✓		✓
Interactive Highway Safety Design Model	45	🧍			✓		✓				✓					
Introduction to Environmental Impact Assessment	46	💻	✓	✓												✓
Introduction to NEPA and Transportation Decision-Making	46	💻	✓	✓	✓					✓	✓	✓	✓	✓		✓
Introduction to Statewide Transportation Planning	46	🧍	✓							✓		✓	✓	✓		
Introduction to Transportation Conformity	47	🧍	✓	✓						✓				✓		
ITS Awareness Seminar	47	💻					✓				✓			✓		
Key Critical Thinking Skills for Strategic Problem Solving and Decision Making	47	🧍	✓	✓	✓	✓	✓	✓	✓	✓						
Leadership Development for the Engineer	48	🧍							✓	✓			✓		✓	
Leadership Development Online Course	48	💻							✓	✓			✓		✓	
Linking Conservation and Transportation Planning	48	🧍	✓	✓								✓	✓	✓		✓
Linking Planning and NEPA: Towards Streamlined Decision Making	49	🧍	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓
Making Social Impact Assessment Count for Planners and Resource Managers	49	🧍	✓	✓						✓		✓		✓		
Managing Transportation & Land Use Interactions	49	🧍	✓	✓							✓	✓	✓	✓		
Mentoring	50	💻	✓	✓	✓	✓	✓	✓	✓							
Metropolitan Transportation Planning	50	🧍	✓	✓	✓					✓	✓	✓	✓	✓		✓
NCI Charrette Planner Certificate	50	🧍	✓									✓			✓	
NEPA and Transportation Decision Making	50	🧍	✓	✓	✓					✓	✓	✓	✓	✓		✓
NEPA Compliance and Cultural Resources	51	🧍		✓								✓	✓	✓		✓
NEPA: What Every Engineer and Project Manager Should Know about NEPA	51	🧍	✓	✓	✓				✓	✓		✓	✓	✓		✓
Participatory Strategic Planning	51	🧍	✓	✓						✓					✓	

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Pedestrian Facility Design	52	🧍	✓		✓		✓				✓			✓		
Planning for Effective Public Participation	52	🧍	✓	✓	✓							✓				
Positive Public Involvement	52	🧍	✓	✓								✓			✓	
Powerful Planning Using NEPA and the Facilitated Planning Approach	53	🧍		✓						✓		✓	✓	✓		✓
Presentation Skills for Engineers and Technical Professionals	53	💻	✓	✓	✓	✓	✓	✓	✓						✓	
Presentation Skills Training for Civil Engineers	53	🧍	✓	✓	✓	✓	✓	✓	✓						✓	
Project Management: Tools, Principles and Practices	53	🧍							✓	✓			✓			
Public Involvement in the Transportation Decision-Making Process	54	🧍	✓	✓	✓	✓	✓		✓	✓		✓				
Public Participation for Decision Makers	54	🧍	✓	✓	✓				✓	✓		✓				
Safety and Operational Effects of Geometric Design Features	54	🧍			✓		✓				✓					
Safety Effects of Geometric Design Features for Two-Lane Rural Highways	55	🧍			✓		✓				✓					
Safety Effects of Geometric Design Features for Multilane Highways	55	🧍			✓		✓				✓					
Safety Conscious Planning: Planning it Safe	55	🧍	✓		✓		✓				✓			✓		
Scoping, Public Involvement and Environmental Justice	56	🧍	✓	✓						✓		✓	✓	✓		✓
Section 106: An Introduction	56	🧍		✓								✓	✓	✓		
Section 4(f) Compliance for Transportation Projects	56	🧍		✓								✓	✓	✓		✓
Skills, Techniques, and Strategies for Effective Negotiation for Engineers	56	🧍							✓						✓	
Socioeconomic Impact Analysis Under NEPA	57	🧍	✓	✓						✓		✓	✓	✓		✓
Succeeding at Internal Communications	57	💻	✓	✓	✓	✓	✓	✓	✓						✓	
Teambuilding for NEPA Specialists	57	🧍		✓					✓			✓	✓		✓	

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Team Leadership: Tools and Methods for Creating Strong, Effective Leaders	57	🧍	✓	✓	✓	✓	✓		✓				✓		✓	
Techniques for Effective Public Participation	58	🧍	✓	✓	✓							✓				
The CMAQ Program: Purpose and Practice	58	🧍	✓	✓			✓				✓					✓
Thinking Strategically -- The Plan, The Process, The Reality	58	💻	✓	✓	✓	✓	✓	✓	✓	✓			✓			
ToP Secrets of Implementation	59	🧍	✓	✓						✓					✓	
Tort Liability & Risk Management	59	🧍	✓		✓	✓	✓	✓			✓			✓		
Tort Liability & Risk Management - Bicycle and Pedestrian Design	59	💻	✓		✓		✓	✓			✓			✓		
Traffic Calming - 2 Part Series	59	💻	✓				✓				✓					
Traffic Calming - Bicycle and Pedestrian Design	60	💻	✓		✓		✓				✓			✓		
Traffic Calming Seminar	60	💻	✓	✓			✓				✓			✓		
Traffic Calming: Strategies that Work	60	🧍	✓		✓		✓				✓			✓		
Transit Noise and Vibration Impact Assessment	60	🧍		✓										✓		
Transit Planning	61	🧍	✓							✓	✓	✓	✓	✓		✓
Transportation and Land Use	61	🧍	✓	✓	✓							✓	✓	✓		
Transportation Asset Management	61	🧍	✓				✓	✓			✓			✓		
Transportation NEPA for Department of Transportation Specialists	62	🧍	✓	✓						✓		✓	✓	✓		
Transportation Planning/Site Impact Analysis	62	💻	✓				✓				✓			✓		
Using Design Flexibility to Achieve Context Sensitive Solutions	62	💻			✓						✓					
Water Quality Management of Highway Runoff	63	🧍		✓	✓	✓		✓						✓		✓

* Delivery Format: 🧍 = In-person | 💻 = Online/Distance Learning

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
ARKANSAS: Environmental Awareness Workshop **Materials:** Agenda	**Length:** 1 day **Intended Audience:** Engineers, maintenance engineers and field supervisors **Trainers:** Staff from DOT and FHWA division office **Offered:** 2003 6 classes statewide	"Taking the environmental department on the road." Explain why they do certain things, such as erosion control methods and environmental mitigation; NEPA/Planning process awareness; cultural resource discovery; endangered species; design issues; review regulations. Established relationships so folks know who to call with questions. Agenda was tailored to the ecoregions in the area.	▪ Welcome and Introduction ▪ Welcome and FHWA NEPA Decision Making Process ▪ Cultural Resources: Section 106 of the National Historic Preservation Act ▪ Wetlands and Waters of the United States: Section 404 of the Clean Water Act ▪ NPDES Phase II/ Erosion and Sediment Control ▪ Restraining Conditions: Borrow Pits, Waste Areas, Field Offices, Storage Areas, and etc. ▪ Scenic Byways ▪ Hazardous Materials ▪ Public Involvement and Public Hearing ▪ Migratory Bird Treaty Act
CALIFORNIA: Design Senior Seminar **Materials:** Agenda	**Length:** 2 days **Intended Audience:** Primarily senior design engineers **Trainers:** Caltrans staff **Offered:** Annually, with varying topics	This seminar includes three simultaneous tracks of modules by Caltrans staff on a variety of design-related topics, plus keynote speeches by Caltrans senior leadership. CSS is presented as one of the modules. Modules are typically one hour long. This seminar was previously restricted to only design engineers, but other Caltrans staff are allowed.	Module topics include: Design responsibilities Teambuilding and coaching Non-motorized design Design sequencing Working with local partners Relinquishment & adoptions Talking about roundabouts Ready to list guide Our environmental partners Structures design services Pavement noise attenuation Bus rapid transit Emerging technology in surveying/design Quality Management Plan Effective communication CSS Purpose & need statement Cooperative agreements Time management Stormwater issues Traffic safety Task manager role Legal lessons ADA design
CALIFORNIA: Landscape Architects Academy **Materials:** Agenda	**Length:** 3 days **Intended Audience:** Landscape architects from district offices **Trainers:** Caltrans headquarters staff, occasional consultants **Offered:** Annually, with a different theme	This annual seminar changes theme each year and includes simultaneous tracks of modules. The seminar occasionally includes CSS modules depending on the theme.	Module topics include: Expediting Delivery While Facilitating a Broadened Scope The Family Tree - Branches of Project Delivery Comprehensive Corridor Planning/System Planning Collaborative Project Development Creates CSS An Overview to the Project Development Process Team Coordination to Meet Project Commitments More Motivation & Minutes to Do My Work Good Design is Simple Design Task Management & Efficiency Avenues to Involvement in Roadway Projects Project Work Plan Development Effective Project Oversight

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
	each year		Cost Considerations when Programming a Project Expectations of Preliminary Design Roadside Management Planning for Worker and Traveler Safety Insight to the Reality that is Maintenance Advocating Transformation of Project Delivery Landscape Feud - Test Your Knowledge of PS&E Project Presentations of Biotechnical Soil Stabilization & Erosion Control Treatments Estimating: Working Days, Plant Establishment & Project Contingencies Visual Impact Assessments – Process and How to Programming 101 Following Through with Project Commitments Articulating your Awareness for Biological Mitigation The PDT Continues Through to Project Acceptance Creative Freedom at Work: Project Presentation of Collaborative Accomplishments
CALIFORNIA: Management Training Program **Materials:** Fact Sheet	**Length:** 8 days, nonconsecutive **Intended Audience:** Middle managers **Trainers:** Caltrans staff **Offered:** Annually, with ten tracks for participants to choose from	Highly interactive eight-day training program, delivered over a four-month period to upcoming middle managers. This course does not currently incorporate CSS, but has the potential for doing so. Chief Deputy Director, Deputy Directors, District Directors, and Division Chiefs nominate and prioritize a list of candidates from their respective areas. The Program brings together a cross-section of participants. Each track consists of a balanced representation of the Department's functional areas.	Participants will: ▪ Receive hands-on experiences and tools to take back and apply in their jobs, while incorporating core management competencies. ▪ Complete a 360-degree individual assessment tool to provide them with feedback from their Supervisors, peers and subordinates on leadership styles and abilities in core competency areas. Topics include: ▪ Orientation ▪ Change Management ▪ Team-Building and Motivation ▪ Communication ▪ Strategic Implementation Business Application ▪ Self-Awareness and Personal Growth
CALIFORNIA: Managing Transportation and Land Use Interactions **Materials:** Website	**Length:** 2 days **Intended Audience:** Planning staff in local, regional, and state agencies; consultants; transportation engineers, project and agency managers, transit planners, community planners, decision-makers, and land	This course covers how to create successful plans and projects, and when to make congestion improvements, including how to identify key feedback relations in your community; how to develop alternatives that balance competing goals and increase choice; and how to communicate the interactive nature of transportation and land use investments to decision-makers. Students improve their understanding of the complex, multi-dimensional nature of the land use and	Topics include: ▪ the effects of transportation improvements on land use and vice versa ▪ transportation's role in growth management, including "Smart Growth" and "New Urbanism" ▪ federal, state, and local requirements for transportation and land use planning ▪ preparing general and specific plans, CMPs, RTPs, TIPs, transportation impact and other studies

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
	developers. **Trainers:** Consultants **Offered:** On demand	transportation linkage. They learn how to apply this understanding to the development of coordinated and consistent plans and studies that bridge between transportation planning and general community planning, and how other communities in California are dealing with controversies among mobility, development, and environmental goals.	▪ how land use/transportation interactions "play" in the general plan process, the transportation planning process, and the CEQA process ▪ use and interpretation of Level of Service policies and sketch planning tools ▪ how to use performance measures to manage impacts and trade-offs
CALIFORNIA: PE Academy **Materials:** Agenda	**Length:** 5 days **Intended Audience:** Engineers **Trainers:** Caltrans staff **Offered:** 5 classes offered each year	5-day seminar includes modules on the function of most areas within the department, especially related to the project delivery process. Includes a 1-hour CSS module.	Modules include: Project Development Products & Process Roles & Responsibilities CSS PM role Geometric Design Pavement Design Surveys Environmental functional role PE role Landscape architecture role Structural design role Stormwater Management Right of Way Role Encroachments Office Engineer Traffic operations Maintenance role Constructability Legal role Coordinator forum Project development team quality workshop PDP language skills development Highway Drainage Design principles
COLORADO: Maintenance Academy **Materials:** Slides for Environmental Awareness	**Length:** 1 day **Intended Audience:** DOT maintenance staff **Trainers:** DOT staff **Offered:** As needed	This is a short presentation entitled "Environmental Awareness: Understanding and controlling unintentional impacts" that is part of a one-day Maintenance Academy for CDOT maintenance personnel. Includes a breakout session for group discussion of a case study. Objectives include: Know CDOT's Environmental Ethic; Use Environmental Awareness to make better decisions.	

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
FLORIDA: Efficient Transportation Decision Making Process **Materials:** Agenda ETDM Manual	**Length:** 1.5 days **Intended Audience:** Efficient Transportation Decision Making coordinators **Trainers:** FDOT staff **Offered:** Usually once per year	Covers the Efficient Transportation Decision Making (ETDM) process using the ETDM Manual. The ETDM Manual, supported by FDOT's Project Development and Environment (PD&E) Manual, describes the approach to be used in the early phases of the overall project delivery process, including planning, conducting environmental reviews and consultation, and performing project development and permitting. The ETDM Manual can be found here.	• INTRODUCTION • HISTORY OF ETDM • ETDM PROCESS OVERVIEW – CHAPTER 2 • TECHNOLOGY AND DATA MANAGEMENT – CHAPTER 3 • PLANNING PHASE – CHAPTER 4 • PLANNING – ENVIRONMENTAL SCREENING TOOL • PROGRAMMING PHASE – CHAPTER 5 • PROGRAMMING – ENVIRONMENTAL SCREENING TOOL • PROJECT DEVELOPMENT – CHAPTER 6 • CLOSE OUT/WRAP-UP
FLORIDA: Livable Communities Workshop **Materials:** Slides Agenda Announcement	**Length:** 1 day **Intended Audience:** FDOT staff and community members **Trainers:** Consultants (Walkable Communities, Inc.) **Offered:** 5 to 6 times per year since 2005	This highly visual, information rich course addresses the remaking of towns from auto congested, angry and uncivil space into peaceful, economical successful, viable village centers, neighborhoods, towns and regions. The presentation illustrates how dozens of successful towns and cities changed their town planning, roadway design and funding decisions from reactive to proactive, achieving livability and financial success. Sponsored by the Florida Department of Community Affairs and Department of Health. Open to the public – many community members attend, including elected officials.	• Introduction • Land Use and Transportation Elements • Healthy Street Making Principles - Traffic and Transportation Elements • Aesthetics, Placemaking • Healthy Streets and Corridor Design Overview • Traffic Calming, Parking and Traffic Management for Roadways • People- and Vehicle-Friendly Intersections and Crossings • Main Streets, Historical Streets, Road Diets

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
FLORIDA: Project Development and Environment Manual Process **Materials:** Agenda PD&E Manual	**Length:** 2 days **Intended Audience:** Staff from local agencies working on state roadway projects; also recommended for FDOT staff **Trainers:** FDOT staff **Offered:** About 2 times per year	Covers the Project Development & Environment (PD&E) Manual, which provides guidance on the process for satisfying the requirements of the National Environmental Policy Act and other related laws, rules and regulations applicable to all projects. This course is required for Local Area Project (LAP) certification. The certification is required for FDOT staff and local agency staff working on transportation projects on state roadways. The PD&E manual can be found here.	• INTRODUCTION • OVERVIEW: ISSUES/PROCESSES PRE-PD&E MANUAL • Ch. 3 CLASS OF ACTION (MINOR PROJECTS) • Ch. 2 ADVANCE NOTIFICATION • Ch. 3 CLASS OF ACTION (MAJOR PROJECTS) • Ch. 4 ENVIRONMENTAL ASSESSMENT • Ch. 5 FINDING OF NO SIGNIFICANT IMPACT • Ch. 6 DRAFT ENVIRONMENTAL IMPACT STATEMENT • Ch. 7 FINAL ENVIRONMENTAL IMPACT STATEMENT • Ch. 13 NON-FEDERALLY FUNDED PROJECTS • Ch. 11 REEVALUATION • Ch. 8 PUBLIC INVOLVEMENT • Ch. 9 PROJECT DEVELOPMENT • CLOSEOUT/COURSE EVALUATION
FLORIDA: Sociocultural Effects Training **Materials:** Overview	**Length:** 2 – 2.5 days **Intended Audience:** Efficient Transportation Decision Making Coordinators, Community Liaison Coordinators, Public Involvement Specialists, Public Information Officers and Project Managers, MPOs and some local governments, District environmental personnel, staff from central Environmental Management Office **Trainers:** Consultant **Offered:** 3 times per year	The participants will learn the theory, methods, and techniques for acquiring and using quantitative and qualitative community data to make effective decisions concerning the social, economic, land use, mobility, aesthetics and relocation effects potentially associated with transportation projects. Incorporates CSS principles.	

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
KENTUCKY: Context Sensitive Solutions in Construction and Maintenance **Materials:** Slides	**Length:** ½ day **Intended Audience:** Construction and maintenance staff **Trainers:** Developed by Kentucky Transportation Center **Offered:** 1 pilot presentation to date	This workshop is intended to provide transportation agency personnel involved in Construction and Maintenance with information about Context-Sensitive Solutions and actions they should take to incorporate it into their routine activities to supplement and support it. There has been 1 pilot presentation in Kentucky in December 2006. Developed by Kentucky Transportation Center for FHWA. FHWA will transmit the materials to state DOTs to deliver.	• Benefits of CSS • Application of CSS to construction activities • Application of CSS to maintenance activities
MAINE: Highway Program Design Training **Materials:** Agenda Flexible Design Practices (from Highway Design Manual)	**Length:** 2 days **Intended Audience:** DOT project development personnel **Trainers:** MDOT staff **Offered:** Twice to date, additional classes as needed	The first day of this course deals with CSS issues, the second day is more general engineering. It is directed towards project development personnel (planning, environment, design, etc.) to make them aware of certain issues in project development that require special attention. The purpose of this is to raise awareness of the project development personnel on topics such as driveways, sidewalks, parking, impact to businesses/homes, etc. The class presents an open forum to discuss concerns and provide a means of improvement." It is required for project development staff.	• Opening Comments • Chapter 2 Design Guide • Thinking beyond the pavement: Initial site visit/project review, Trees, Utilities • Geometric Design: Alignment, super elevations, Impacts, State v. ASSHTO standards, Design Exceptions, Intersections • Environmental issues: MHPC, 4F, Wetlands, Permitting, In Stream, ACOE Screening, Misc. • ADA requirements, When and Where to Use ADA • Misc Design Issues • Design Guide and Pavement Design: Over view of Ch. 13, FWD results/soils data, Recycling, Pavement design • Traffic: Traffic issues, Night Work, Taming Process • Quality Plans: Legends, Plan/Profile, Earthwork Computations, Do's and Don'ts of plan creation • Right of Way: Drainage easements, work permits, slope easements, Permanent rights versus temporary rights, Easement, wrought portion, Fee rights of way, Requesting titles and determining impacts, Condemnation process

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
MAINE: Risk Management and Tort Liability **Materials:** Slides	**Length:** 1.5 hours **Intended Audience:** DOT project development staff **Trainers:** Consultants (CH2MHill) **Offered:** As needed	Module created by CH2MHill as part of a longer CSS course. Slides and speaker notes briefly describe the origins of tort liability and its application to transportation projects and CSS. Learning objectives are: Gain perspective on the issue of safety and risk; Provide overview of fundamentals of tort liability related to highway planning and design decisions; Gain understanding of definition and requirements for design exceptions; Review best practices for risk management.	
MINNESOTA: Advanced Skills for Project Managers **Materials:** Agenda Slides Handouts	**Length:** Varies, 1 to 3 days **Intended Audience:** Project managers **Trainers:** MnDOT staff **Offered:** Once per year	This course expands upon the Essential Skills for Project Managers course (see below) by offering more advanced and complex or particularly current/urgent level topics and skills.	• Introduction and Welcome • How Major Activities Fit Together • Using PPMS Effectively • Budget Development and Financial Health of Mn/DOT • Project Scoping and Scope Management • Authority and Decision Making Design Build • Building Effective Relationships with Regional and Local Units of Government • Managing Consultants • Agreements – Municipal, Utilities and Railroad • Managing Bus, Rail Bicycle and Pedestrian Options • Project Risk / Identification Management • Innovative contracting • The Right of Way Process, Access Management, Official Map • Document Management System • GIS/LIS • Review of the Day's Learning and Training Wrap Up and Certificates

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
MINNESOTA: CSD&S Advanced Design Flexibility	**Length:** 2.5 days **Intended Audience:** Designers, project managers, project team members, stakeholders **Trainers:** MnDOT, Univ. of Minnesota Center for Transportation Studies, consultants **Offered:** Under development	This workshop is undergoing development and will combine and integrate the format and approach of the condensed CSD&S workshop with an advanced level emphasis on the exploration and application of Flexibility in Design in addressing and balancing competing objectives to achieve excellence in design and CSS. The intent of this workshop is to take designers, project managers, multi-disciplinary project team members, and critical stakeholders beyond the general comfort zone to exploration of the uncomfortable cutting edge of Flexibility in Design exploration and application	Not yet identified.
MINNESOTA: Environmental Stewardship Workshop	**Length:** 2 days **Intended Audience:** Project managers and other functional areas **Trainers:** MnDOT staff **Offered:** Once per year	Annual 2-day workshop in a conference format, focusing on hot topics and current needs. Includes a 2-hour CSS awareness component (for description see Minnesota under Awareness Classes). In the past, the environmental training school curriculums have ranged from one to four days based upon the perceived project management needs and the extent to which significant changes are occurring in regulatory requirements and guidance.	Past topics have included: • Context Sensitive Solutions • Environmental Stewardship • Transportation & Environment – integrating design and environment with careful planning • FHWA's Environmental Policy • Project Development Process – addressing social, economic and environmental impacts • Agency & Stakeholder Coordination • The Project Manager's Tool Box – the project managers roles, responsibilities and needed attributes • Critical Thinking • Managing Controversy • Preparing for Meetings
MINNESOTA: Essential Skills for Project Managers **Materials:** Agenda Module 1 slides Module 2 slides Module 3 slides Module 4 slides	**Length:** 8 days, nonconsecutive **Intended Audience:** Project managers **Trainers:** MnDOT staff, Univ. of Minnesota Carlson School of Management **Offered:** Once per year	This is an 8-day course, delivered in four two-day modules over the span of about six weeks. The course is intended to address educational and experience gaps for project managers so that they may be able to effectively manage complex projects. Project managers should have a "holistic project" focus, understanding and accountability. The course includes approximately 28 strategic focus areas of training and interactive participation (as a goal). A portion (1.5 to 2 hours) of the course directly addresses CSS in the project development process.	▪ Training Program Review & Introductions ▪ Project Management in Mn/DOT ▪ Project Management (PM)-Formulation & Decision Making; Development & Scheduling ▪ Cost Participation Policy ▪ Environmental Factors in Project Development ▪ Facilitating Effective Meetings ▪ High Performance Teams and Team Building ▪ Effective Stress Management ▪ Managing Consultants ▪ PPMS and Project Delivery Overview ▪ Scoping Initiative ▪ Conflict Management & Negotiation in a Project

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
			Environment ▪ Utility Agreements & Utility Permits ▪ Communicating with Impact ▪ Highway Access Management ▪ Effective Writing Skills for Mn/DOT's Business ▪ Providing Effective Bicycle & Pedestrian Facilities ▪ Public Involvement ▪ Context Sensitive Design & Solutions ▪ Building Relationships (Internal & External) ▪ Leadership in Project Management ▪ Intergovernmental Partnership ▪ Transportation Planning, Programming, Federal Funding ▪ Project Record Keeping ▪ Roles & Responsibilities of a Project Manager ▪ Working with the Media
MINNESOTA: Training for Public and Organizational Involvement in Context Sensitive Design **Materials:** Agenda Announcement	**Length:** 2 days **Intended Audience:** 65% MnDOT staff and 35% others, including broad cross-section of consultants and stakeholders (local and tribal governments, external agencies, elected officials and citizen activists) **Trainers:** MnDOT, Univ. of Minnesota Center for Transportation Studies, consultants (Beacon Associates, Zan Associates) **Offered:** Once or twice per year	The workshop combines and integrates the format and approach of the condensed CSD&S workshop with an advanced level emphasis on managing effective public participation. Within the workshop, participants satisfy requirements and receive certification from the International Association for Public Participation (IAP2) for completion of their core training course on Effective Public Participation for Executives & Decision Makers. This workshop is only conducted with 2 to 3 presenters and facilitators and 4 to 5 expert panelists, plus an IAP2 certified Master Trainer.	• Session 1: Commitment to Public Participation and Context Sensitive Design • Session 2: Establishing the Value of Public Participation • Session 3A: Understanding Context • Session 3B: Skill Practice – Understanding Context • Session 4A: Developing Public Participation Plans • Session 4B: Skill Practice – Developing Public Participation Plans • Session 5A: Using Public Participation Techniques • Session 5B: Skill Practice – Using Public Participation Techniques • Session 6: Communicating Effectively Within Your Organization • Session 7A: Using Design Charettes to Help Build Consensus • Sessions 7B: Skill Practice – Using Design Charettes to Help Build Consensus

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
MINNESOTA: Visual Impact Assessment **Materials:** Videos	**Length:** About 1 hour **Intended Audience:** DOT staff involved in project development **Trainers:** MnDOT staff **Offered:** Web-based videos	The Minnesota Department of Transportation and the Federal Highway Administration have created a video presentation on the six-step Visual Impact Assessment process. It is required that Impacts to visual quality be evaluated for all federally funded projects under NEPA. The Visual Impact Assessment process was created to anticipate and mitigate adverse visual impacts, as well as to recognize and take advantage of opportunities for enhancing the existing visual quality of project area. This presentation is available for online viewing or download in MPEG format.	▪ Step 1: Identify Affected Visual Resources ▪ Step 2: Identify Affected Population ▪ Step 3: Define Existing Visual Quality ▪ Step 4: Analyze Impacts to Visual Quality ▪ Step 5: Determine the Visual Advantages and Disadvantages Among Alternatives ▪ Step 6: Mitigate Visual Impacts and Enhance Visual Quality
NEW HAMPSHIRE: CSS Advanced Skills Training **Materials:** Agenda	**Length:** 2 days **Intended Audience:** Project Development Staff in all regional, RPO staff, external stakeholders **Trainers:** Consultants (Sally G. Oldham) **Offered:** Twice in 2008	This course is designed to assist staff using the CSS principles in their projects to develop advanced skills. It focuses on NH project examples, deriving lessons from projects underway and then applying CSS concepts to projects that will begin in the near future. It covers collaborative problem solving and CSS decision-making, facilitation and conflict resolution skills, reframing of issues and different methods of consensus building. It analyses existing NHDOT public involvement plans and employs an exercise to develop a public involvement strategy for an upcoming project. It analyses NHDOT problem and vision statements to understand how well each is tailored to its project. It employs the flipchart consensus technique to develop criteria for evaluating alternatives for an ongoing NHDOT project.	• Advanced Communications • Developing/Evaluating Public Involvement Plans • Developing/Evaluating CSS Problem & Vision Statements • Developing/Evaluating Evaluation Criteria for Project Alternatives

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
NEW HAMPSHIRE: iTRaC Program **Materials:** Overview Website for current training	**Length:** 2 to 3 hours **Intended Audience:** Staff from local agencies and municipal governments, stakeholders, the general public **Trainers:** Varies, typically staff from a state or local agency **Offered:** Varies	The Integrating Transportation and Community Planning (iTRaC) program was started by the Nashua Regional Planning Commission in 2006. iTRaC is a comprehensive program that offers training, online resources on key topics, best practices guides, a lending library, and specific planning assistance as needed. Education and training are key components of the iTRaC program - iTRaC sponsors training seminars, which are available free of charge to anyone interested. These trainings typically take place in the evening and are meant to provide participants with a broad overview of a particular planning topic. About 8-10 different seminars are offered each year on varying topics. Presentations and materials are available on the website for some seminars.	Recent seminar topics have included: • Habitat Protection Planning • Introduction to RSA's • Stormwater Management Techniques • Case Law: What local boards need to know • Energy Efficiency • Traffic Calming • Form Based Codes
NEW JERSEY: Design Flexibility **Materials:** Slides	**Length:** 1 ½ days **Intended Audience:** Design engineers, planners, environmental specialists **Trainers:** Consultants (Dewberry, HNTB). Sponsored by the New Jersey chapter of the American Council of Engineering Companies **Offered:** As needed	The purpose of the training was to teach designers and planners/environmental specialists alike the science and reasoning behind the establishment of the specific values included in design manuals. Designers often set values for design elements such as lanes, shoulders, sight distance, curves, grades, etc. without ever knowing the science and logic behind, for instance, why manuals usually require shoulders and why those values are often set at 8 feet. Individuals who don't understand the reason(s) for a shoulder therefore don't understand when it is important to insist on them, and when they can be comfortable with reduced, intermittent or even no shoulders. The same follows for all other design elements. Understanding the theory behind how these values was set therefore becomes critical to flexible design and CSS.	• Components of Geometric Design • Summary of relevant guidance, from the Green Book to the MUTCD • 13 controlling design elements (shoulders to vertical curvature; controlling design features (as opposed to elements) namely functional class, design speed, design vehicle, topography, etc.

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
NEW YORK: Charrette Workshop **Materials:** Announcement	**Length:** 2 days **Intended Audience:** Design engineers, planners, program managers, project managers, others directly engaged in public involvement **Trainers:** Consultant (Walkable Communities, Inc.) **Offered:** Once to date	This course will prepare participants to successfully host or conduct a charrette. At the conclusion of the class, participants will be knowledgeable in the theory, principles, practices, and pitfalls of interactive charrette-style public decision-making. The workshop will provide participants with methods of conducting focus groups, determining community values, and assessing when the Charrette is the preferred process to use. This is accomplished through highly interactive discussions and a Walking Afield exercise.	Skills learned include how to: • Manage charrettes from start to finish • Achieve consensus one step at a time • Set up the charrette studio and manage consultants, the public, interns and volunteers • Turn out products, documentation, and final Charrette report • Create shared community vision • Maintain political leadership and support • Keep citizens informed and involved • Coordinate with other partnering and approving agencies
NEW YORK: Controversial Issues Process **Materials:** Announcement	**Length:** 1 day **Intended Audience:** Design Engineers, Traffic & Safety Engineers, Planners, and other Transportation Professionals **Trainers:** New York Governor's Office of Employee Relations **Offered:** 6 times to date	One-day workshop offered by the Governor's Office of Employee Relations, covering conflict resolution in public involvement settings. This workshop teaches a process to resolve controversial issues and lessen interpersonal and intergroup conflict. The process provides a structured methodology for airing and listening to entrenched positions on both sides of an issue and then re-framing the issue to take the concerns of both sides into account. These skills are useful for DOT staff involved in public involvement and those who facilitate public meetings where groups with competing values and positions are present.	Participants will learn a set of skills that include: ▪ listening and repeating back another side's concerns; ▪ asking questions that elicit the deep concerns underlying another side's position; ▪ mapping out the concerns on each side of an issue; ▪ re-framing the issue in a way that builds bridges; ▪ developing a plan of action for "next steps".
NEW YORK: CSS for Construction/ Operations/ Maintenance Personnel **Materials:** Slides (version 1) Slides (version 2)	**Length:** 1 hour **Intended Audience:** Construction, operations and maintenance personnel **Trainers:** NYSDOT staff **Offered:** Unknown	Two brief sample presentations designed to introduce construction, operations, and maintenance personnel in NYSDOT to CSS. Definitions, benefits and myths of CSS are discussed. The presentations include a variety of case studies illustrated visually using graphics to show CSS-related activities.	

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
NEW YORK: Edgewater: Competing Values in a Transportation Project **Materials:** Exercise (1 hour) Exercise (1.5 hours) Graphics	**Length:** 1 – 1.5 hours **Intended Audience:** Personnel who may benefit from exploring the effectiveness of partnerships and communication **Trainers:** NYSDOT staff **Offered:** Once to date	This exercise is designed for Department personnel who may benefit from exploring the effectiveness of partnerships and communication between different program groups. A 'Master of Ceremonies' introduces the project context, keeps time for the segments of the exercise and wraps up the session. Several 'floating' facilitators can answer questions and assist the discussion groups. There are two slightly different versions of the exercise, one designed to take one hour, the other designed to take 1.5 hours. Each works with discussion groups of 10-15 people. Another file contains additional maps and photos of the case study area.	• Introduction of the workshop, and overview of the case study o Village of Edgewater, problems and context o Proposed project o What we will discuss • Roundtable discussion amongst participants o Identify potential stakeholders (At the conclusion of this section, each participant will be given a stakeholder role) o Identify and discuss issues of concern to your stakeholder group • Report out stakeholder issues of concern • Wrap-up
NEW YORK: Integrated Transportation Decision-making **Materials:** Description Slides Case Study Reference material	**Length:** 2 days **Intended Audience:** Project development staff in all regions and MPO staff **Trainers:** Consultants (CH2MHill) **Offered:** 5 times to date	This course provides a framework for analyzing and delivering decisions, methods and tools for managing stakeholder needs, and real case examples. The fundamental objectives of the training were to: Provide a framework for analyzing and delivering decisions; Provide methods and tools to manage and respond to stakeholder needs in a balance with transportation goals; and to provide real case examples of applying these tools and the results that were generated. The basis for the Integrated Decision Making Training is the 6-Step framework. The format of the modules includes lecture, discussion of applications, and a great deal of case examples specific to highway design.	• Overview of 6-Step Decision Making Framework • Module 1: Decision Making Framework • Module 2: Leadership and Commitment through Organizational Structuring • Module 3: Leadership and Commitment through Team Chartering • Module 4: Framing the Problem • Module 5: Communication Tools • Module 6: Evaluation Model Approach • Module 7: Facilitating Decision-making • Module 8: Wrap-up
NEW YORK: Legal Issues in Design **Materials:** Agenda	**Length:** 1 day **Intended Audience:** Design engineers **Trainers:** NYSDOT legal staff **Offered:** Unknown	One-day workshop covering tort liability in highway design. Includes case studies and group discussion.	▪ Welcome & Housekeeping ▪ Introductions & Expectations ▪ Introduction to Basics of General Tort Law ▪ Basics of Highway Design /Planning Tort Law ▪ Case Studies ▪ Personal Liability, Freedom of Information Law, Open Meeting Laws ▪ Case Examples ▪ Wrap up

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
NEW YORK: Overview of the Project Development Process **Materials:** 3 sets of slides: General presentation Landscape architects and the project development process Landscape architects conference presentation	**Length:** 1 – 3 hours **Intended Audience:** Varies **Trainers:** NYSDOT staff **Offered:** 15 to date, additional as needed	Three variations on this presentation are available: for a general audience, for landscape architects, and a presentation to the annual environmental/landscape architecture meeting (shorter presentation). These presentations cover the NYSDOT project development process as described in the Project Development Manual and the department's CSS policy. Each section of the process is described in detail. For the landscape architects presentation, significant time is devoted to describing the landscape architect's role in the project development process.	
NEW YORK: Placemaking **Materials:** Description	**Length:** 1 day **Intended Audience:** Regional design staff, project designers, landscape architects, highway designers, planners, design managers and environmental staff; staff from other partnering transportation resource agencies **Trainers:** Consultants (Project for Public Spaces) **Offered:** 7 times to date	This workshop is to provide staff and partners with the tools necessary to adequately assess all the needs of a community when developing transportation projects. The PPS training class is interactive and teaches an approach for evaluating and planning for places that enhances both the transportation goals and community needs. It gives participants an opportunity to discuss the CSS approach and to engage in problem solving activities. Part of the class involves assessing a prearranged field site where participants will apply placemaking techniques to an actual location.	
NEW YORK: Understanding the Existing Context **Materials:** Slides	**Length:** 1 hour **Intended Audience:** Unknown **Trainers:** NYSDOT staff **Offered:** Unknown	Short powerpoint presentation describing CSS principles, steps to defining the context of a project, examples of CSS in New York, and resources available to NYSDOT staff.	

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
PENNSYLVANIA: Transportation, Historic Preservation and You: A Citizen's Introduction **Materials:** Announcement	**Length:** 3 hours **Intended Audience:** Citizens, planners and public officials **Trainers:** Preservation Pennsylvania, Federal Highway Administration, MPO and RPO Staff, PHMC and PENNDOT **Offered:** As requested	This highly interactive course provides citizens, planners, and public officials with the basics of transportation planning and implementation and its interaction with historic preservation. Participants will gain an understanding of the citizen's role in planning and implementing transportation projects that work for the future and preserve the past. The workshop explains key laws and the role of different agencies in transportation and historic preservation. It explains the public involvement opportunities, what resources (including funding) may be available for community projects, and how to take action to protect local resources. This workshop is presented upon the request of a specific community.	I) Introduction: Why Is This Stuff Important? II) Where Do Roads Come From? An Introduction to Transportation Planning III) Foundations: NEPA, Transportation and Preservation IV) Historic Preservation Law: A Brief Introduction in Plain English! V) Where the Rubber Meets the Road: The Real World of Transportation Projects and Preservation VI) Doing Your Part: The Role of Planners, Preservation Professionals, and Citizens VII) Questions and (Some) Answers

TENNESSEE: Building High Performance Teams
 	
Materials:
Outline
	Length:
	2 days
	
	Intended Audience:
	Those leading or participating in teams
	
	Trainers:
	Consultants (Phase 3 Performance)
	
	Offered:
	Twice to date, additional as necessary
		This workshop provides the knowledge and tools to embrace a thorough understanding of how different people work together; you will learn how to fully utilize project teams and individuals to achieve team success. You will understand the need for balance in your work teams, and how to ensure that you will assign the right work assignments to the individuals that are best suited to do the best work. TDOT has offered this course twice, once to an external stakeholder group as part of a project, once internally to staff.	• Overview
			• Stabilizing the Team When the Going Get Tough
			  • Values
			  • Balance the Team
			  • Conflict Resolution
			  • Care and Control Zones
			  • Change Management
			  • Small Group Work on a Real World Scenario
			• Cruising – Success Breeds Success
			  • Balance Process (Task) with People (Relationship)
			  • Balance Change with Stability
			  • A new way to conduct effective Meetings
			  • Crucial Communications Skills
			  • Understand your work habits
			  • Evolution toward self-management
			  • The Team System
			  • Final Team Presentation
			  • Commitments and Action Plans

Course Title	Logistics	Purpose/Objectives/Outcomes	Modules
TEXAS: Community Impacts **Materials:** Website	**Length:** 2 days **Intended Audience:** TPD staff, environmental coordinators, area engineers, design engineers and planners **Trainers:** TxDOT staff. Contact Roland Limon 416-2691 for more information. **Offered:** Unknown. Cost is $154.	This course will prepare staff to effectively identify and evaluate social and economic impacts of transportation projects on individuals and communities. Upon completion of this course, participants will be able to: 1. Explain the benefits of a community impact analysis within the framework of project development, and how these analyses can improve decision-making. 2. Explain the laws, regulations, policies and procedures related to social and economic impacts. 3. Prepare documentation on community impacts	• 1. Introduction • 2. Defining the Community and Community Impacts • 3. Reviewing Regulatory Guidance • 4. Defining the Project • 5. Finding Information on Community Impacts • 6. Building a Community Profile • 7. Analyzing Impacts - The Alternatives • 8. Analyzing Impacts - The Alternatives (Cont.) • 9. Documenting Community Impacts • 10. Ending the Workshop
TEXAS: Public Involvement **Materials:** Website	**Length:** 2 days **Intended Audience:** TPD staff, environmental coordinators, area engineers and public information officers **Trainers:** TxDOT staff. Contact Roland Limon 416-2691 for more information. **Offered:** Unknown. Cost is $145.	The class will prepare staff to develop an effective public involvement program and how to better conduct public involvement efforts for transportation projects. Upon completion of this course, participants will be able to: 1. Explain the benefits of active, outreaching public involvement; 2. Describe the laws, regulations, policies and procedures; 3. Plan, organize and conduct effective public involvement efforts; and 4. Prepare accurate and appropriate documentation	• 1. Introduction • 2. Understanding Public Involvement Needs • 3. Identifying Public Involvement Needs • 4. Preparing to Conduct Public Involvement Interactions • 5. Conducting Public Involvement Interactions • 6. Documenting the Public Involvement Process • 7. Ending the Workshop

Course Title	Logistics	Purpose/Outline
FHWA: CSS Briefing **Materials:** Agenda	**Length:** 1 day **Intended Audience:** State DOT, MPO/RPO, other transportation agency staff **Trainers:** K. Lynn Berry (FHWA Resource Center) **Offered:** As needed	This agenda is presented as an example of how FHWA Resource Center staff can custom design a ½ to 1 day briefing on CSS for a specific DOT (in this case, a DOT and MPO) based on their needs and interests. K. Lynn Berry included modules in this briefing focused on what other states and MPOs are doing regarding CSS, lessons learned from successful TxDOT projects and programs, environmental justice, CSS in planning, and more.
FHWA: CSS Management Briefing **Materials:** Louisiana agenda Louisiana presentation South Dakota presentation	**Length:** varies **Intended Audience:** State DOT, MPO/RPO, other transportation agency staff **Trainers:** K. Lynn Berry (FHWA Resource Center) **Offered:** As needed	Two sets of materials illustrate how FHWA Resource Center staff have worked with state DOT management to introduce them to CSS. The presentations generally cover the status of CSS implementation around the country, common concerns/issues with CSS, and organization-wide structure and procedures that are necessary to support CSS implementation. One set of materials was created for a 2-hour presentation to South Dakota DOT senior management; the other set of materials was created for a management briefing to Louisiana DOT that was part of a one-day workshop focused on action planning and implementation strategies for CSS within the department.
FHWA: The "Contexts" of Context Sensitive Solutions **Materials:** Agenda	**Length:** 1 day **Intended Audience:** State DOT, MPO/RPO, other transportation agency staff CASE STUDIES/EXAMPLES ARE PRESENTED THROUGHOUT **Trainers:** K. Lynn Berry (FHWA Resource Center) **Offered:** As needed	▪ Historical Context o Political/Cultural o Legislative o Policy/Trends ▪ Environmental Context o Applies to all classes of action: CEs, EAs, EISs o Purpose and Need o Range of Alternatives o Affected Environment ▪ Community Context o Public Involvement o Community Impact Assessment o Environmental Justice ▪ Transportation Context o The Challenges of Highway Design o Design Level of Service; Design Speed; Design Vehicle; The "Design Driver" o Tort is a Four Letter Word!

Course Title	Logistics	Purpose/Objectives/Outcomes
Access Management, Location and Design	**Length/Cost:** 3 days, $400 **Intended Audience:** Federal, State, and local planners and engineers who are currently involved or expect to be involved in decisions on, and/or design of, access to existing or new sites **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-133078.	This course covers access management along streets and highways. General benefits as well as the social, economic, political and legal implications of access control are examined. Existing access management practices and policies from States and jurisdictions are used as examples of what types of programs have been implemented and how effective they have been. Through in-depth discussion, access management techniques and the warrants for their use are reviewed. Guidelines for design and application of these access management techniques are described in detail. Strategies for developing and implementing retrofit programs to improve existing access control are presented. The course presents several "before" and "after" case studies, which show the impacts of retrofit programs on local businesses. Techniques and procedures for evaluating the impacts of access control on the safety and operations of the highway system are also covered.
Accessible Pedestrian Signals	**Length/Cost:** 1 day, $190 **Intended Audience:** Traffic engineers, city planners, orientation and mobility specialists, dog guide instructors, people who are blind or visually impaired, travel instructors/trainers, people with disabilities other than visual impairment **Organization:** National Transit Institute **Offered:** Rutgers University, NJ, once per year	Accessible pedestrian signals have been put into place to assist with difficult crossings. Unfortunately, many of the travel practitioners who teach people with disabilities to cross streets do not understand the use of accessible pedestrian signals and many of the people with disabilities have difficulty using them. In addition, traffic and transportation engineers who are responsible for recommending installation of APS often are not aware of the needs of people with disabilities or the best locations at which to install such signals. The end result for the community is lack of access and reduced independent mobility for people with disabilities. This one day course presents comprehensive lessons on integrating accessible pedestrian signals into intersection design and signalization. Through interactive exchanges, class participants will work together to solve problems, learning how to network and capitalize on each others' strengths to improve the accessibility of the built environment.
Accounting for Cumulative Effects in the NEPA Process	**Length/Cost:** 2.5 days, $750-825 **Intended Audience:** **Organization:** Duke Environmental Leadership Program **Offered:** Duke University, NC, once per year	In 1997, the Council on Environmental Quality published "Considering Cumulative Effects Under the National Environmental Policy Act." For the first time since the passage of NEPA, this handbook provides a framework for advancing the state of the practice. While the handbook is not regulatory in nature, it presents practical methods for addressing effects (adverse or beneficial) on specific resources, ecosystems, and human communities for all related activities, not just the proposed action. The process of analyzing cumulative effects can be thought of as enhancing the traditional components of an environmental impact assessment. This two and one-half day workshop will review cumulative effects concepts and principles, scoping techniques, baseline conditions and information sources and methods for effects identification and prediction. Examples of cumulative effects analysis with possible appropriate responses will be presented.

Course Title	Logistics	Purpose/Objectives/Outcomes
Adaptive Management	**Length/Cost:** 2 days, cost varies **Intended Audience:** Resource specialists, team leaders, decisionmakers, and other agency professionals who must understand the AM and NEPA processes to fully execute their responsibilities. **Organization:** Shipley Group **Offered:** Location varies, offered on request	This workshop is tailored to meet the needs of the participants. The basic format of the interactive workshop includes the following components: Discovering a New Approach, Understanding the AM Framework, Implementing AM. Upon completion of this workshop, participants will be able to do the following: Understand the Adaptive Management (AM) process and how to put AM processes to use, Extend the decisionmaking process into implementation to manage for uncertainty, risk, and variability in dynamic natural processes, Manage for desired outcomes, Use science-based monitoring to evaluate progress toward desired outcomes.
Addressing Cultural Resources in the NEPA Process	**Length/Cost:** Varies **Intended Audience:** **Organization:** Environmental Impact Training **Offered:** Location varies, offered on request	This course relates to the institutional requirements and procedures for addressing the impacts of proposed projects, plans or programs on historic or prehistoric (archaeological) resources. Particular attention is given to the National Historic Preservation Act and the 1999 modifications to the Section 106 process, the Archeological Resources Protection Act and the Native American Graves Protection and Repatriation Act. Other topics include: Interrelationships between the proponent agency, State Historic Preservation Office, Tribal Historic Preservation Office and the Advisory Council on Historic Preservation; Records searches; Planning and conducting cultural resources surveys. Numerous examples of successful approaches for addressing and managing cultural resources provide useful illustrations for appropriate professional practice.
Administration of FHWA Planning and Research Grants	**Length/Cost:** 2 days, $270 **Intended Audience:** FHWA, DOT, MPO and other agency staff who expend or administer FHWA planning and research grants, including planning and fiscal staff. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-151021.	The course covers the responsibilities and relationships among Federal, State, and local agencies involved in administration of FHWA planning grants to States and State subgrants to metropolitan planning organizations (MPOs) and local governments. It provides a forum for FHWA planning and financial staff, State, MPO, and other local agency staff to discuss the Federal requirements associated with highway planning program grant administration. The course covers current changes to relevant administrative regulations and directives including Office of Management and Budget (OMB) Circular A-102; 49 Code of Federal Regulation (CFR) Part 18, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments (USDOT's regulations implementing Circular A-102); and 23 CFR Part 420 (FHWA's regulations for highway planning and research funds). Limited coverage of allowable costs, cost allocation plans, and audit requirements is also included.

Course Title	Logistics	Purpose/Objectives/Outcomes
Advanced Applications of Context Sensitive Solutions	**Length/Cost:** 4.5 hours total, in three parts. $375-468 **Intended Audience:** DOT, MPO/RPO, and other transportation agency staff **Organization:** Institute of Transportation Engineers **Offered:** 2-3 times per year as a webinar	Often times, highway and traffic engineers struggle with what appear to be conflicting guidance. As designers strive to practice context sensitive design by developing unique and creative solutions to specific circumstances, they are challenged by practicing in a work environment in which standard design approaches, concerns over tort liability and safety are paramount. This 3-part series would put into perspective the project development process in the context of CSS, design standards, manuals and traffic safety. At the conclusion of the course, participants should be able to: Identify stakeholders for any project; Develop an appropriately-scaled stakeholder involvement plan; Implement a stakeholder involvement plan; Recognize when a project requires a stakeholder involvement specialist or facilitator; Demonstrate how creativity can be incorporated into the highway project development process by using flexibility that is inherent in existing design. references, design standards and the use of standard details; Apply a model for incorporating substantial and nominal safety in a meaningful way to define problems and address them in a CSS setting; Recognize the purpose and applicability of policies, standards, guidelines and criteria for geometric design; Assess the traffic and safety effects of design exceptions and minimize associated risks.
Advanced Negotiation Training Course for Natural Resource Professionals	**Length/Cost:** 2.5 days, $695 **Intended Audience:** Generally federal land agency employees, but a diverse group **Organization:** U.S. Geological Survey, Policy Analysis and Science Assistance Branch **Offered:** Fort Collins, CO, once per year	This training course presents participants with advanced principles, skills, and techniques used in natural resource negotiation. The focus in this class is on strategy development and effective management of negotiating teams. Previous negotiating experience and training are prerequisites for this course. If students have not attended the Basic Negotiation course or are not sure which class to attend, they should consult with instructors before registering for this class. The Advanced course is a dynamic mix of lecture, hands-on training, evaluation, and discussion. Course materials include a training handbook and online readings. At this course, participants will learn to: 1. Diagnose natural resource negotiations. 2. Plan multi-party, long-term negotiations. 3. Select, assemble, and lead an effective negotiation team. 4. Obtain and apply technical information in a negotiation process. 5. Apply negotiation strategies to a variety of management situations.
Advanced Public Involvement	**Length/Cost:** Varies **Intended Audience:** Project or program teams that are involved with the public **Organization:** Environmental Training & Consulting International, Inc. **Offered:** Location varies, offered on request	Custom-designed to solve your public involvement problems, this workshop focuses on the specific issues you face in your projects. Specific skills and techniques may include the following, depending on the needs of your team: Developing congruent information on all channels (including media kits); Coaching for more effective briefings and presentations; Gathering more specific information from your public; Regaining public rapport/trust if you've lost it; Public Involvement program design – what do you want, and how do you get it?; Doing it right the first time – legal sufficiency vs. long-term effectiveness; Selecting appropriate Public Involvement methods, based on your desired outcome; Handling irate publics – in person, on the telephone, in writing.

Course Title	Logistics	Purpose/Objectives/Outcomes
Advanced Seminar on Managing the Environmental Review Process	**Length/Cost:** 2 days, free for government employees, $295 for consultants **Intended Audience:** Transportation professionals from transit agencies, metropolitan planning organizations, and departments of transportation with a minimum of five to ten years experience in the environmental process relative to project development **Organization:** Federal Transit Administration, Office of Planning and the Environment, and the National Transit Institute **Offered:** New York, NY, once per year	The goal of this day and a half seminar is to support the efficient and effective management of environmental processes in the development and construction of transportation projects, with particular emphasis on transit and multi-modal project. It will focus on providing current information on federal requirements, highlighting innovative practices, and facilitating the sharing of information and insight among advanced practitioners in the industry. Topics will include: Overview of SAFETEA-LU Requirements, Developing an Environmental Strategy, Improving an Environmental Strategy, Improving the Quality of NEPA Documents, Beyond the Record of Decision, Linking Planning and NEPA, Regional Issues, Evolving Issues/Challenges
Advanced Seminar on Transportation Project Development: Navigating the NEPA Maze	**Length/Cost:** 3 days **Intended Audience:** Experienced environmental practitioners, project development managers, and consultants from FHWA, state DOTs, resource and permitting agencies, and local governments. Prerequisites include: NEPA and Transportation Decisionmaking (FHWA-NHI-142005) or the web-based Introduction to NEPA and Transportation Decisionmaking (FHWA-NHI-142052). **Organization:** National Highway Institute **Offered:** Course information not yet available.	This highly interactive three-day advanced seminar focuses on applying NEPA principles to the decisionmaking process for transportation projects. While the introductory NEPA/Transportation Decisionmaking course (FHWA-NHI-142005) devotes considerable time and energy to conveying concepts and describing the components of the NEPA process, this Advanced Seminar will provide the necessary tools and strategies necessary to apply this information to the decisionmaking process. Through instructor-led and facilitated discussions, presentations, case studies, and other exercises, participants will be guided through the decisionmaking process, made aware of potential pitfalls, and given the skills and knowledge to apply critical thinking to reach defensible decisions.
Advancing Transportation Systems Management and Operations	**Length/Cost:** 1 day, $200 **Intended Audience: T**ransportation managers, service providers, public safety officials, public works directors, and business sector members of chambers of commerce; operators and planners from States, cities, counties, and MPOs. Familiarity with regional transportation planning, operations, and ITS initiatives is helpful. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-133098.	This course provides an understanding of Transportation Systems Management and Operations (TSM&O) in a regional context. It explores 21st century transportation challenges and how to advance TSM&O through a cultural shift in operations and planning. Throughout this course, collaboration and coordination among transportation professionals and related stakeholders are emphasized as key components to reshaping the culture and enabling the advancement of TSM&O. A five-part framework for collaboration and coordination is described to assist transportation professionals and related stakeholders in working together in a meaningful and sustained way. NOTE: There is a 2-hour Executive Summary Seminar available to State and local elected and appointed officials.

Course Title	Logistics	Purpose/Objectives/Outcomes
Alternative Contracting	**Length/Cost:** 2 days, $270 **Intended Audience:** Personnel working in contract administration, project development and design, and the management of highway construction, including contribution of information in contract provisions. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-134058.	This course addresses the legal aspects, and potential program implications of using alternative project delivery strategies and nontraditional contracting practices. This includes alternative project delivery methods such as design-build, construction manager at risk, and performance contracting. It also includes the use of nontraditional contracting provisions such as warranties, multiparameter bidding, incentive-disincentive provisions for contract time, lane rental, alternate pavement type bidding, and many other nontraditional contracting techniques. The course has certain required modules; however, the requesting agency may customize the course by selecting from additional modules. Classroom activities include lectures, case studies, workshops, and writing assignments.
Applying GIS and Spatial Data Technologies to Transportation	**Length/Cost:** 2 days, $270 **Intended Audience:** Professional users of spatial data technologies from State DOTs, MPOs, county/city governments; professional staff from State/Federal agencies that have cooperative data efforts with other agencies. Participants should have a basic understanding of GIS or have completed course FHWA-NHI-151029 Applications of GIS for Transportation. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-151039.	This course was developed by FHWA–in cooperation with the Bureau of Transportation Statistics–to train participants in how to implement transportation planning applications that rely on spatial data technologies. Examples of applications using today's major spatial data technologies are described. Aspects of the example applications are discussed. Particular emphasis is placed on crosscutting implementation issues, both technological and organizational. Exercises are focused on how to make use of spatial data technologies in an environment where data sharing and cooperative agreements are essential components for success. Reflecting NHI's commitment to learner-centered training, the course offers participants opportunities for discussion and joint problem solving, through which they will gain information about the roles and responsibilities of other team members. The overall course goal is to prepare participants to evaluate and plan for the implementation of a variety of transportation planning applications that rely on spatial data technologies.
Applying the NEPA Process	**Length/Cost:** 2-3 days, cost varies **Intended Audience:** Resource specialists, team leaders, decisionmakers, and other agency professionals who must understand the NEPA process to fully execute their responsibilities. **Organization:** Shipley Group **Offered:** Location varies, offered on request	This workshop is tailored to meet the needs of the participants. The basic format of the interactive workshop includes the following components: Understanding the NEPA and CEQ Regulations, Selecting the Appropriate Level of Documentation, Developing Alternatives, Identifying Issues and Scoping, Predicting Environmental Consequences, Understanding NEPA Decisionmaking and Decisionmaker Skills. Upon completion of this workshop, participants will be able to do the following: Manage the National Environmental Policy Act (NEPA) process so that the spirit and the letter of the act are fulfilled legally and efficiently; Implement the Council on Environmental Quality (CEQ) regulations and agency regulations; Oversee contractors who conduct environmental analyses and/or write Environmental Assessments (EAs) and Environmental Impact Statements (EISs); Review documents for compliance with NEPA, CEQ regulations, and the agency implementing procedures.

Course Title	Logistics	Purpose/Objectives/Outcomes
Assessing Cumulative Impacts	**Length/Cost:** 2 days, cost varies **Intended Audience:** Topical specialists who work in the environmental impact assessment arena, including biologists, geologists, botanists, foresters, archaeologists, air and water specialists, health physicists, NEPA managers, engineers and others who prepare EAs or EISs or who manage or support those who do. **Organization:** Environmental Training & Consulting International, Inc. **Offered:** Location varies, offered on request	Cumulative effects must be evaluated for both environmental impact statements (EISs) and environmental assessments (EAs). These evaluations are often challenging, even for the most experienced practitioners. In this course you'll learn to more readily recognize cumulative impacts and to systematically use the seven primary and the four secondary methods of cumulative effects analysis. You'll leave the seminar with a greatly expanded understanding of the Council on Environmental Quality's (CEQ) January 1997 Cumulative Effects guidance and increased ability to apply that understanding on your EIS and EA projects.
Basic Negotiation Training Course for Natural Resource Professionals	**Length/Cost:** 2.5 days, $595 **Intended Audience:** Generally federal land agency employees, but a diverse group **Organization:** U.S. Geological Survey, Policy Analysis and Science Assistance Branch **Offered:** Fort Collins, CO, twice per year	The course design is a mix of lecture, hands-on training, and discussion. Course materials will include a training handbook and online readings. Participants and instructors will candidly discuss examples of successes to embrace, stalemates to recognize, and failures to avoid in multi-party natural resource negotiations. Some of the critical competencies to be identified include; clarity of interests, fairness, honesty, trust, toughness, persistence, a good sense of humor and recognition of other interests, as well as the need for technical expertise coupled with creativity at the negotiating table. This 2 1/2-day course will give in-depth strategies, skills, and techniques applied to participants' and trainers' historical, on-going, and future multi-party natural resource negotiations. Rich discussions are promised.
Best Strategies and Skills for Winning Negotiations	**Length/Cost:** 2 days, $745 **Intended Audience:** Experienced managers, new supervisors, technical professionals moving into greater responsibilities, high-potential employees, and anyone who is in a position to influence either the day-to-day or strategic management of their organization. **Organization:** North Carolina State University **Offered:** Raleigh, NC, once per year	Like it or not, you are a negotiator. Everyone negotiates some important issue almost every day, whether it is a raise with the boss, pricing, project schedule, assignments, a contract with a client, or weekend plans with the family. Negotiation is a basic means for getting what you want and settling differences. This seminar is designed to enhance your bargaining skills and help you be a more effective negotiator. Incorporated into this workshop are leading-edge theories and techniques from both Harvard and Stanford University that will have immediate application.
Better Decision Making: Numerical Methods and Beyond	**Length/Cost:** 2 hours, $149-199 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	Our daily lives require myriad decisions. Many of them are routine, but some have long lasting effects and others have hidden complexity. Whether managing a business or your own life, making better decisions -- in the face of uncertainty, time pressure, and imperfect judgment -- will improve your personal and professional life. Utilizing structured decision making using numerical methods that assess outcomes and risk in competing options can provide insights into the decision that might not be considered by the "gut instinct" decision maker.

Course Title	Logistics	Purpose/Objectives/Outcomes
Beyond Compliance: Historic Preservation in Transportation Project Development	**Length/Cost:** 3 days, $400 **Intended Audience:** Staff from State DOTs, MPOs, FHWA headquarters and field offices, City and County governments, Tribal governments, Consultants, State and Tribal Historical Preservationists (SHPO/THPO), and other Federal and State resource agencies. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142039.	The current Section 106 regulation strongly encourages close coordination between Section 106 activities and National Environmental Policy Act (NEPA) requirements, as well as consultation with Native Americans, local communities, and the public. It also gives agencies greater flexibility and streamlines the Section 106 consultation process. This course is designed to help transportation professionals meet the requirements of Section 106 and take advantage of the greater flexibility and autonomy offered by the recent revisions. The course focuses on the fundamentals of Section 106, placing it in the context of NEPA, and Section 4(f) of the Department of Transportation Act, and provides techniques for coordinating transportation planning, project development, and compliance with these three laws. The emphasis is on practical approaches for real-world situations and the importance of balancing stewardship and project delivery, and coordinating environmental review with project planning.
Bicycle and Pedestrian Transportation Planning	**Length/Cost:** 2 days, $475 **Intended Audience:** This course is designed for planners, engineers and landscape architects involved with transportation issues. **Organization:** Virginia Tech University **Offered:** Falls Church, VA, once per year	Topics covered include: Design guidelines that work for bike and pedestrian planning; The latest information on cutting edge topics like car-sharing, bike-sharing and traffic calming; Case studies of innovative projects, from the Washington, D.C. region and across the United States
Bicycle Facility Design	**Length/Cost:** 1.5 days, $260 (includes a copy of the AASHTO guide) **Intended Audience:** Federal, State, or local engineers with planning, design, construction, or maintenance responsibilities; bicycle specialists; transportation planners; landscape architects, as well as decision makers at the project planning level. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142046.	Bicycle facility design is an emerging subject. The availability of Federal, State, and local transportation funding for bicycle facilities that serve transportation and recreational users is resulting in a dramatic increase in the number of facilities being planned and built. Although there are no Federal design standards for bicycle facilities, a newly adopted "American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities," or a modification thereof, is being used by many States and localities as the design guide. However, designing bicycle facilities often requires not only the use of the AASHTO guide as well as other documents, but also the application of engineering judgment where specific information is not provided. This course will assist planners and designers in learning how to apply the existing standards and how to deal with other technical issues involved.

Course Title	Logistics	Purpose/Objectives/Outcomes
Collaboration in the NEPA Process	**Length/Cost:** 3-4 days, cost varies **Intended Audience:** Participants for this training generally include those who are involved in collaborative activity among Federal, State, Local and Tribal governments. **Organization:** Shipley Group **Offered:** Location varies, offered on request	This workshop is tailored to meet the needs of the participants. The basic format of the interactive workshop includes the following components: Understanding NEPA Laws and CEQ Regulations; Opportunities for Collaboration; Developing a Communication Strategy. Upon completion of this workshop, participants will be able to do the following: Understand the National Environmental Policy Act (NEPA) process and the Council on Environmental Quality's (CEQ's) guidance on cooperating agencies; Identify points of opportunity for cooperation and collaboration within the NEPA process; Understand cooperating agencies' roles and responsibilities; Understand strategic planning and its role; Generate a collaborative model for alternatives; Write clear, easy-to-understand Memorandums Of Understanding (MOUs) that work; Understand the objection process and administrative appeal process.
Collaborative Decision Making Models	**Length/Cost:** Contact for information **Intended Audience:** Transportation officials involved in the decision making process **Organization:** ICF International **Offered:** Contact for information: Peter Bonner Senior Vice President ICF International 703-934-3815 pbonner@icfi.com	This presentation is potentially applicable to many state DOTs wishing to have more background on and analysis of decision making in general, and how it is applied to transportation projects. Click on the name to the left to see the slides, and see the contact information to the left for more information about using the course. 1. Opening Exercise 2. Decision Making Models – Contingency Theory – Game Theory – Social Network Theory 3. Experiences in Collaborative Decision Making 4. Collaborative Decision Making Typologies – Scales to determine archetypes – Some types of contingent organizations – Decision rules for types 5. Ideas for Developing a Toolbox
Communication Skills: Listening	**Length/Cost:** 1 hour, $75-125 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	This webinar-on-CD explains how to ask questions and how to listen so that you and your business or government organization can be more effective. Topics included in this one-hour workshop include five forms of communication, levels of attentiveness, power of questions, tips on asking, and a personal action plan. 1-hour.

Course Title	Logistics	Purpose/Objectives/Outcomes
Communications for Effective Public Participation	**Length/Cost:** 1 day, $315 **Intended Audience:** Those working in the field of citizen engagement, public involvement or stakeholder relations; government, private sector or a not-for-profit. Participants should be beginning to intermediate level professionals who wish to master the basics of how to design and deliver a public participation program. **Organization:** International Association for Public Participation **Offered:** 2 to 3 times per month in various locations (see website for scheduled classes)	This one-day module in IAP2's Certificate Program in Public Participation offers an overview of the communication skills used by public participation practitioners. The course provides an introduction to communication skills and models. It introduces the Principles of Authentic Communications and focuses on tools used to prepare and present information materials in a variety of forms, small and large group interaction models and facilitation essentials. This course is designed as a primer and is suitable for beginning to intermediate level practitioners and those who want a review of basic communication techniques. Interactive exercises and practical tips are used to enliven the basic theory and reference materials presented throughout the day and reinforce skills that participants can put to immediate use. Participants learn the elements needed to prepare communication plans and to practice active listening. They gain an understanding of the essentials of risk communication, making effective written and verbal presentations and working with mass media.
Community Impact Analysis **Materials:** Agenda Description Slides References Case Studies CIA Purple Book (FHWA publication)	**Length:** 2 days **Intended Audience:** Planning and project development practitioners. **Trainers:** National Highway Institute (forthcoming) **Offered:** On request	Two-day course developed by the Center for Transportation and the Environment at North Carolina State University for Federal Highway Administration. The purpose of this 2-day course is to prepare transportation professionals and practitioners to incorporate and use the FHWA Community Impact Assessment (CIA) process during transportation decisionmaking. Strives to help transportation professionals understand the critical linkage between the planning and project development processes. To date it has been delivered in North Carolina, but is anticipated to be added to the NHI course catalog for nationwide delivery.
Conducting Quality Cumulative Impact Analyses under the National Environmental Policy Act (NEPA)	**Length/Cost:** 2 to 3 days, cost varies **Intended Audience:** Advanced NEPA practitioners, reviewers, and managers, or those wishing to improve interdisciplinary working relationships within the agency and with cooperating and commenting agencies. **Organization:** Environmental Planning Strategies, Inc. **Offered:** Location varies, offered on request	This interactive workshop, individually tailored for the Federal/state agency requesting training, focuses on conducting effective and practical NEPA cumulative impact analyses, including selecting the proper scope of analysis and decisions, developing the appropriate baseline, incorporating correct past, present, and reasonably foreseeable future actions, and conducting complete and sufficient cumulative impact analyses. The emphasis on practical planning and impact processes and strategies, based on powerful and readily implementable planning approaches, includes CEQ regulations and cumulative impact guidance, Environmental Protection Agency cumulative impact guidance, court decisions and precedents, and effective impact analysis tools and processes. Participants actively discuss cumulative impact analysis cases, implementing the process for conducting cumulative impacts systematically, within the framework of NEPA, the CEQ regulations, CEQ and EPA guidance, and legal precedent. A variety of cumulative impact analyses, prepared by other agencies are reviewed and local cases analyzed.

Course Title	Logistics	Purpose/Objectives/Outcomes
Conflict Resolution and Negotiation Tools for Cultural and Natural Resource Projects	**Length/Cost:** 3 days, $525-575 **Intended Audience:** Agency, industry, consulting firm, and nonprofit decisionmakers, cultural and natural resource project managers, and public involvement managers. **Organization:** National Preservation Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Laws and regulations related to cultural and natural resources often require participatory processes that can be mired in conflict and misunderstanding. Projects frequently can be more effectively navigated when stakeholders use collaborative processes to identify and resolve problems during consultation. Learn how to design and manage a collaborative process and how to use a range of tools associated with negotiation and consensus building through participatory role-plays, interactive exercises, and case studies
Content Analysis and Public Response Management	**Length/Cost:** 2 days, cost varies **Intended Audience:** Project managers, environmental coordinators, team leaders, resources specialists and decisionmakers involved in preparing environmental projects. **Organization:** Shipley Group **Offered:** Location varies, offered on request	This workshop is tailored to meet the needs of the participants. The basic format of the interactive workshop includes the following components: Project Initiation, Project Planning, Understanding the Microsoft® Project Environment, Conducting the Executing and Controlling Processes, Conducting the Closing Process. Upon completion of this workshop, participants will be able to do the following: Understand project phases and the project life cycle, Define project stakeholders, Practice effective project communication, Understand projects vs. product processes, Understand management processes, including initiating processes, planning processes, executing and controlling processes, and closing processes, Use Microsoft® project software.
Context Sensitive Solution Challenges in the Urban Street Environment **Materials:** Slides	**Length:** About 2 hours **Intended Audience:** DOT, MPO/RPO, and other transportation agency staff **Trainers:** Tim Neuman **(**CH2MHill, Inc.) **Offered:** On request	Slides from a presentation made to the Linn County Regional Planning Commission Seminar in April 2006. Covers many elements of flexible design and CSS in the urban context.
Cultural Competency for Urban Planning and Development	**Length/Cost:** Half-day, $50-110 **Intended Audience:** Urban planners, community development professionals **Organization:** The Leading Institute **Offered:** Rutgers University, NJ, twice per year	As our communities and organizations become more diverse, we are challenged to find new ways to inform, influence and persuade. You will learn techniques and skills to help you plan, manage and lead more effectively. This workshop provides a balanced view of diversity. Explore: • The mistakes that (even well-meaning) planners and leaders make that hurt diversity efforts. • How to identify and address "tribalism." • The challenges and benefits of diversity • Exercises that help to manage conflict and reduce negative tension.

Course Title	Logistics	Purpose/Objectives/Outcomes
Cumulative Effects Assessment	**Length/Cost:** Varies **Intended Audience:** **Organization:** Environmental Impact Training **Offered:** Location varies, offered on request	This course describes concepts and approaches for incorporating cumulative effects considerations within the EIA process. The substantive topics addressed include: Principles and procedures; Determining spatial and temporal boundaries for cumulative effects; Defining baseline conditions; Delineation of reasonably foreseeable future actions; Use of methods for identifying cumulative effects; Incorporation of CEA considerations in the scoping process; Examples of cumulative effects prediction methods; Mitigation and monitoring of cumulative effects. Special attention is given to case studies as an approach for defining lessons learned.
Dealing with Difficult Behavior and Situations	**Length/Cost:** 1.5 hours, $115-165 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	Have you ever found yourself thinking in frustration, "If it weren't for our personnel, clients, and stakeholders, this would be a great job?" Inevitably, each of us encounters difficulty dealing with certain coworkers, clients, and stakeholders. Assuming we've first "looked in the mirror" to honestly ask to what extent we are at least part of the problem and have self-corrected, then we may be open to ideas for dealing with difficult behavior exhibited by others and difficult situations created by others. If you are seeking assistance in addressing these difficulties, this one-hour webinar-on-CD is for you. Presented are practical methods for recruiting and retaining diverse but compatible personnel and dealing with difficult situations both within and outside of our organizations.
Decisionmaking for Cultural and Natural Resources in the Legal Environment	**Length/Cost:** 2 days, $375-425 **Intended Audience:** Cultural or natural resource managers and staff responsible for decisionmaking. **Organization:** National Preservation Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	The management of cultural and natural resources and cultural property collections requires knowledge of the relevant law, the legal process, and specific obligations, and an understanding of the manager's responsibilities. Learn how to navigate the legal environment and survive scrutiny by a variety of constituencies. Discuss how to evaluate choices that lead to creative solutions and sound decisionmaking, while limiting or quickly resolving legal actions.
Deploying Integrated ITS - Metropolitan	**Length/Cost:** 2 days, $270 **Intended Audience:** State agency, MPO and local transportation professionals who implement ITS, deal with public safety, plan for highway and transit; ITS specialists. **Organization:** National Highway Institute **Offered:** Location varies, offered on request	This course is part of the core Intelligent Transportation Systems (ITS) curriculum established by the ITS Professional Capacity Building (PCB) program. For more information on the core curriculum, go to http://www.pcb.its.dot.gov/Catalogs/ITSCurriculum.htm#section2. This course supports integrated intelligent transportation system infrastructure deployment with consideration of the National ITS Architecture. The regional context in which the public components of ITS infrastructure will be implemented and integrated is emphasized. The course combines the technical and institutional components of integrated ITS infrastructure. The importance of each component is discussed and placed in context with the regional decision that must be made by State and local agencies. Transportation program managers will obtain an understanding of the technical and institutional implications for deploying integrated infrastructure within the framework of a regional architecture.

Course Title	Logistics	Purpose/Objectives/Outcomes
Designing Accessible Pedestrian Facilities in the Public Right-of-Way	**Length/Cost:** 8 hours, $700 (for all four modules) **Intended Audience:** Transportation practitioners, designers and planners. Prerequisite: Designers need to have civil engineering, architecture or landscape architecture design experience, particularly related to horizontal and vertical design of surfaces. **Organization:** Institute of Transportation Engineers **Offered:** Web-based course, register at: http://www.ite.org/emodules/source/orders/index.cfm	This series of four individual courses is intended to provide practicing traffic and highway engineers, planners and transportation managers with a better understanding of the latest Public Rights-of-Way guidelines developed by the US Access Board, and how they can be applied in better designing sidewalks and intersections to accommodate persons with disabilities. Each of the four course modules is designed to be informative in the area of identifying the needs of persons with disabilities, provide practical engineering approaches to successfully addressing these needs on existing facilities, and serve as catalysts in promoting innovative solutions to similar challenges at future locations. Module 1–Pedestrian Accessibility: Introduction and Context. Module 2–Planning for Accessible Pedestrian Rights-of-Way. Module 3–Accessible Sidewalks and Pedestrian Access. Module 4–Accessible Pedestrian Crossings.
Designing Bicycle Facilities	**Length/Cost:** 1.5 hours, $115-165 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	This webinar-on-CD provides guidance on the best practices for designing a variety of bicycle facilities. Various treatments that have been implemented by public agencies to improve safety for bicyclists traveling on heavily traveled corridors in large urban areas will be discussed. Guidance will be provided on geometric design parameters for bicycle lanes, off-street bike paths and intersections. Signing and striping for bicycle facilities will be discussed especially at locations where bicyclists have to cross heavily traveled streets and intersections. A variety of sources will be referenced including the 2003 MUTCD (Manual of Uniform Traffic Control Device) and the AAHSTO Guide for the Development of Bicycle Facilities.
Designing Safe, Accessible Pedestrian Facilities	**Length/Cost:** 2 days, $225-375 **Intended Audience:** Engineers, planners, and consultants with responsibility for planning, designing or constructing pedestrian facilities along streets and highways. **Organization:** University of California Berkeley **Offered:** California, specific location varies, offered once per year	State and federal policies assert that pedestrian facilities are important parts of a multi-modal transportation system. Communities across California are asking for more emphasis on walkability, with facilities that are safe and comfortable for all pedestrians, including those who are disabled. This new course covers principles and good practices, including how to plan, design, and operate a wide range of pedestrian-friendly facilities, including sidewalks, crosswalks, and other public spaces adjoining or intersecting the vehicular transportation system. Application of current standards and guidelines is emphasized. Case studies and in-class exercises supplement lectures.
Developing High-Impact Training	**Length/Cost:** 6 hours online plus pre-assignments, $125 **Intended Audience:** Training coordinators who are new to Instructional Systems Design. Anyone who wants to learn about the five-phased ADDIE model to develop interactive training for adult learners will benefit. **Organization:** National Highway Institute **Offered:** On request. Course #FHWA-NHI-420046.	This blended course consists of six Web conferences and several self-directed pre-session assignments to help participants view training in a systematic way. Approximately six hours of online, facilitated instruction and six hours of self-paced assignments make up this course. This course focuses on proven Instructional Systems Design (ISD) principles that help training designers develop meaningful and effective training content. ISD is a systematic approach to the design and development of training that all-but-guarantees that training interventions will have an impact on your learners and on your organization. Upon completion of the course, participants will be able to: Sketch the ISD Model; Express the value of applying the ISD Model to a knowledge/skill gap; Explain each phase of the ADDIE Process; Identify the desired outcomes of each phase of the ADDIE Process.

Course Title	Logistics	Purpose/Objectives/Outcomes
Engineer's Survival Kit: Tips for Moving Ahead and Keeping Your Head While Practicing the "Art" of Engineering	**Length/Cost:** 1 hour, $75-125 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	Consulting and public sector engineers who work on the front lines of local government are frequently exposed to pressures from citizens and elected officials that may be inconsistent with their professional training. Often swirling controversy results and you find yourself alone, standing behind your engineering degree. However, you can improve your resiliency and weather the storms more pleasantly if you have prepared the foundation of trust with local officials. This webinar-on-CD will focus on what to do and what not do in order to keep your sanity and your job.
Environmental Bootcamp for Engineers	**Length/Cost:** 2 days, $1,085-1,295 **Intended Audience: P**roject engineers and managers who work on projects where NEPA, ESA and wetlands are critical issues. This course is designed for individuals with and without background in NEPA,ESA and CWA Section 404. **Organization:** American Society of Civil Engineers **Offered:** Location varies, offered 3 times per year (see website for scheduled classes)	This two-day training covers the most common federal environmental and natural resource regulations encountered by engineers during project development. The seminar focused on three regulations: the National Environmental Policy Act (NEPA), the Endangered Species Act, and Section 404 of the Clean Water Act. Failure to follow the procedures and analysis required by these regulations can significantly delay your project and increase your costs. This seminar provides training on how to navigate the process effectively; what different federal agencies may require of you and why early contact with them is critical; and integration with other laws. We brief you on the five most common delays and what you can do to prevent them. The seminar provides sound information on what you need to do, and when, to ensure that you complete your project on schedule.
Environmental Communication for Behavior Change	**Length/Cost:** 40 contact hours over a 6-week class period, $595 **Intended Audience:** **Organization:** Duke Environmental Leadership Program **Offered:** Instructor-led web-based course, offered once per year	This course provides environmental professionals with a practical introduction to the strategies, methods, and tools of environmental communication that effectively lead to changes in behavior. The field-based skills gained through this course will benefit all practicing environmental professionals faced with the challenge of changing behaviors. The premise of this course is that most environmental problems are caused by human behavior and have long-term implications. To address and create long-term solutions to these problems, behavior needs to change. The course is six weeks in length and is taught in an entirely online, distance learning format. A different theme within the topic of environmental communication will be addressed each week.
Environmental Conflict Management	**Length/Cost:** 3 days, cost varies **Intended Audience:** Governmental agencies involved in environmental or resource management, as well as organizations engaged in environmental decisionmaking. **Organization:** Shipley Group **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Participants learn about environmental conflict negotiation and management, and are introduced to the nature of public conflict and management styles. They discuss specific issues relating to environmental negotiation and learn appropriate approaches and techniques through hands-on training, role-plays, and activities. Upon completion of this workshop, participants will be able to do the following: Understand the nature of environmental conflict, including its sources, characteristics, and opportunities for negotiation; Analyze conflict management styles and their situational effectiveness; Enhance the decisionmaking process and handle potential conflict situations through effective communication skills; Develop implementation and evaluation strategies associated with environmental decisionmaking; Understand traditional and current approaches to environmental management and policy making.

Course Title	Logistics	Purpose/Objectives/Outcomes
Estimating Regional Mobile Source Emissions	**Length/Cost:** 3.5 days, $460 **Intended Audience:** Transportation planning staff from State DOTs and MPOs; staff from other governmental agencies; FHWA, FTA, and EPA staff; transit operators; and consultants who are involved in this field. Should have one to three years of experience in travel demand forecasting, conformity or air quality analysis, or have completed FHWA-NHI-152054 Introduction to Travel Demand Forecasting and/or the NTI's Introduction to Transportation/Air Quality Conformity course. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-152071.	Metropolitan planning organizations (MPOs) and State departments of transportation (DOTs) have the responsibility of creating mobile source emissions estimates to support transportation conformity determinations in areas that violate NAAQS. These emissions estimates are based on travel demand models, highway performance monitoring system (HPMS) data, and emission rate models. In addition, planners from air agencies are responsible for developing mobile source emissions inventories based on a similar set of assumptions and techniques. It is in the interest of the MPOs and DOTs as well as air agencies to perform this analysis using best practice analysis techniques. The focus of this training course is to develop the skills of planners and practitioners responsible for estimating mobile source emissions so that they can incorporate these techniques their areas of practice. This course has been developed in coordination with the US Environmental Protection Agency (EPA).
Evaluation of Public Participation	**Length/Cost:** 1 day, $315 **Intended Audience:** Those working in the field of citizen engagement, public involvement or stakeholder relations; government, private sector or a not-for-profit **Organization:** International Association for Public Participation **Offered:** 2 to 3 times per month in various locations (see website for scheduled classes)	This one day module outlines the purpose and benefits of evaluating community engagement activities. You will be given an understanding of the difference between process and outcome evaluation questions and success indicators. There will be discussion on appropriate data and information collection techniques and how to use the data effectively to justify and demonstrate the value of engaging communities. Using realistic case studies, attendees will take a 'hands-on' approach to developing participative evaluation methods, and then formulating ways of evaluating the participation that they sought to achieve. 1. How can evaluation theory support greater levels of public participation in solving problems, setting directions or making decisions? 2. How can public participation itself be evaluated for success and improvement?
Facilitating Action-Oriented Meetings	**Length/Cost:** 1 hour, $75-125 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	Meetings can be both enjoyable and productive if thoughtfully planned, conducted and followed up. And you can be the "hero" by orchestrating productive meetings! Presented in this one-hour webinar-on-CD are practical suggestions to help you plan, conduct and follow-up on successful meetings. It's not "rocket science", but careful organization and thoughtful consideration of and preparation by participants are absolutely required.

Course Title	Logistics	Purpose/Objectives/Outcomes
Facilitating Conciliation: Beyond Conflict Resolution	**Length/Cost:** 2 days, $545 **Intended Audience:** Facilitators, trainers, mediators, managers, team leaders, consultants, lawyers, union leaders, human resources professionals, community leaders, parents, educators. **Organization:** Institute of Cultural Affairs **Offered:** Location varies, offered 4 times per year (see website for scheduled classes)	Our society is crying for alternatives to the adversarial approach of dealing with disputes. Resolving conflict with a different form of conflict does not work. Negotiating from bases of power and fixed positions deepens the divide and expands the problem. The best and most lasting solutions and resolutions are those created by the people directly involved. After Taking This Course You Will Have: Methods for discussion and dialogue; Methods for problem solving; Clear concept of the role of the facilitator; Tips, tools and practical applications you can use; Workable alternatives to the adversarial style; One hour of free coaching within 6 months of the course. This Course Focuses On: Understanding the sources of conflict; Blocks to conciliation; Creating a healthy atmosphere; Ways to hold a dialogue over sensitive topics; Joint problem solving; Developing solutions for difficult problems.
Facilitating Project Excellence	**Length/Cost:** 3 days, $1,495 **Intended Audience:** Facilitative leaders who manage projects or teams; internal or external consultants who help clients develop and manage projects; and facilitators of strategic planning, organizational improvement initiatives, campaigns, programs and retreats **Organization:** Institute of Cultural Affairs **Offered:** Location varies, offered 3 times per year (see website for scheduled classes)	Facilitating Project Excellence creatively blends ToP facilitation methods and key project management tools to focus teams on the activities necessary to achieve superior results. It demonstrates how to define and maintain focus on a project's mission, strategies and goals, while establishing clear stakeholder accountabilities. Participants in the course work in small teams, supported by networked computers and Goal Director software as they follow the project lifecycle to develop their real projects. Benefits: Teams generate greater understanding and ownership of projects; Strategic planning strengthened through project implementation; Expanded capacity from facilitation and computer technology linkage; Avoidance of common planning and controlling problems and pitfalls; Effective sharing of essential project information and progress reporting; Introduction to critical project management tools and a valuable software resource.
Facilitating the NEPA Process	**Length/Cost:** 1 day, cost varies **Intended Audience:** Anyone who engages in the NEPA process or who manages or supports those who do. This workshop is especially useful for NEPA teams, such as agency Interdisciplinary Teams, or those who coordinate the NEPA compliance or documentation function for their organization. **Organization:** Environmental Training & Consulting International, Inc. **Offered:** Location varies, offered on request	The NEPA process is complex and challenging even for experienced practitioners. This course will provide valuable tools and templates for making the process work the way you want it to: faster, smoother, better. (Yes, you can have all three). What You 'l l Learn: How to set outcomes for the NEPA process itself; Making sure legal requirements are met; Measuring the effectiveness of your processes; Learning from mistakes; Being realistic and ensuring continual improvement; Planning your NEPA project; Coordinating budget, timeline, staffing, and compliance; Public involvement issues; Making sure all the pieces fit together; Getting all the players on the same page (literally); Using protocols, templates and checklists to track progress.

Course Title	Logistics	Purpose/Objectives/Outcomes
Flexibility in Design - A New Way of Thinking	**Length/Cost:** 2 days, cost varies **Intended Audience:** Transportation engineers and designers, construction managers, and municipal designers involved in the planning and decision-making process of transportation improvements. **Organization:** American Society of Civil Engineers **Offered:** Location varies, offered on request	The Context Sensitive Solutions (CSS) process incorporates the FHWA emphasis on the joint use of transportation corridors by pedestrians, cyclists and public transit vehicles (AASHTO 2001 Policy of Highways and Streets 2001). Designers should recognize the implications of this sharing of the transportation corridors and are encouraged to consider not only vehicular movement, but also movement of people, distribution of goods, and provision of essential services. Participants will gain an understanding of the key core components of employing a flexible design approach. The seminar will utilize case studies that have won FHWA awards and will have the opportunity to work with instructors who have been key contributors in the success of those projects.
Fundamentals of Project Management for Transportation Engineers	**Length/Cost:** 2 days, $250-395 **Intended Audience:** Engineers, planners, and managers from California transportation or public works agencies who are involved in various aspects of project management. Recommended for those new to project management; also recommended for experienced individuals desiring refresher training. **Organization:** University of California Berkeley **Offered:** California, specific location varies, offered 3 times per year	This new 2-day course will give you necessary working skills to effectively manage transportation and public works projects, large and small, in California. The course will cover the various stages of project management typically encountered by California agencies, including: planning, pre-design, design, construction, and maintenance and operations. You will learn about project organization, planning, scheduling, budgeting, accounting, quality assurance, contracts, managing contractors, permits and agreements, effective project communication, leadership, team building, and negotiation.
Fundamentals of Title VI/Environmental Justice	**Length/Cost:** 2 days, $270 **Intended Audience:** Federal, State, and local transportation agency transit or planning personnel who interact with minority and low-income communities. State and local agency personnel providing community services. Elected officials and their representatives. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142042.	Environmental justice and Title VI apply to every stage of transportation programs. USDOT and its partners are committed to nondiscrimination in all Federal-aid programs. Many opportunities exist to establish partnerships with other public and private organizations to create more livable communities. This course presents a framework for using a variety of approaches and tools for accomplishing environmental justice goals. OUTCOMES: Upon completion of the course, participants will be able to: • Define environmental justice and describe its relationship to Title VI of the Civil Rights Act of 1964 • Explain the fundamental principles of environmental justice • Apply the principles of environmental justice to transportation decisions • Identify how environmental justice applies to every stage of transportation decision making • Describe the benefits of environmental justice in transportation decision making • Develop proactive strategies, methods, and techniques to implement environmental justice in transportation programs and projects.

Course Title	Logistics	Purpose/Objectives/Outcomes
Geometric Design: Applying Flexibility and Risk Management	**Length/Cost:** Not yet determined **Intended Audience:** This course is a moderate to advanced level course intended for highway design practitioners that have at least a basic understanding of geometric design criteria. The target audience is engineers that are involved in applying engineering judgment in the selection of design criteria and in the assessment of design exceptions. **Organization:** National Highway Institute (Course Number: FHWA-NHI-380095) **Offered:** Not yet offered, in development	This course is a moderate to advanced level course intended for highway design practitioners that have at least a basic understanding of geometric design criteria. Highway designers often face many complex trade-offs and a quality design is commonly thought of as one that satisfies the needs of a wide variety of users and balances cost, safety, mobility, social and environmental impacts. Good design requires more than simply assembling elements from the available tables, charts and equations of criteria. This course provides participants with knowledge to make informed decisions when applying engineering judgment and flexibility with respect to geometric design. This course emphasizes the application of current knowledge from research and operational experience of human factors and safety effects for various design elements. The course includes facilitated discussions and questioning with practical work problems and exercises based on actual case studies.
Group Facilitation Methods	**Length/Cost:** 2 days, $545 **Intended Audience:** People who are actively involved in the leadership and facilitation of groups and teams, including supervisors, executive directors, managers, professional facilitators, private consultants, training managers, educators, health practitioners, community specialists, concerned citizens and team members in high performance environments who need increased exposure to group participation methods to be effective. **Organization:** Institute of Cultural Affairs **Offered:** Location varies, offered 82 times per year (see website for scheduled classes)	Learn three proven processes for activating group participation. Gain hands-on experience practicing methods and explore ways to apply them to your specific situation. The Focused Conversation Method: Learn a structured process that helps you plan and facilitate a meaningful exchange of ideas. Discover ways to involve every member in thinking through difficult issues. This process heightens your effectiveness in facilitating virtually every form of group communication. The Consensus Workshop Method: Energize problem-solving with a process that builds active participation and teamwork. Productively channel diverse ideas into consensus decisions everyone can own and support. Learn tools to help groups reach new levels of creativity and cooperation. The Action Planning Method: Master this powerful implementation planning process which enables you to help a group rapidly pull together an effective plan, organize needed resources and mobilize individuals' energy into action.
How to Establish and Manage an Interdisciplinary Team	**Length/Cost:** 2 days, $555-645 **Intended Audience:** Environmental coordinators, team leaders, resource specialists, and decisionmakers involved in preparing NEPA documents. **Organization:** Shipley Group **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Participants learn how to effectively and efficiently establish and manage IDTs. From defining the project and decisionmaker to determining roles and responsibilities of the IDT leader and team members in completing the analysis, participants will be much better prepared to manage the process. The workshop also emphasizes the importance of efficient document management and recordkeeping. Upon completion of this workshop, participants will be able to do the following: Choose or appoint an Interdisciplinary Team (IDT) leader and IDT members to satisfy legal requirements; Jointly develop an IDT scoping document; Conduct IDT meetings; Use sound review techniques; Provide timely updates; Record team meetings; Arrange for feedback on the NEPA analysis process, documentation, and the IDT process.

Course Title	Logistics	Purpose/Objectives/Outcomes
How to Turn a Place Around: Creating Great Neighborhood Spaces	**Length/Cost:** 2 days, $405-475 **Intended Audience:** Professionals and non-professionals alike who help plan towns and cities -- from highway engineers and real estate developers to community garden advocates and housing specialists. **Organization:** Project for Public Spaces **Offered:** New York, NY, offered twice per year	Based on PPS's 30 years of experience in placemaking, and inspired by our popular book, How to Turn a Place Around, the course shows participants our unique approach to revitalization. This course puts us in the heart of Greenwich Village, a thriving historic neighborhood that's evolved enormously in recent years. It provides ample examples of mixed-use buildings, residences and offices, historic brownstones next to new developments, on varying scales. We'll visit Bleecker Street, Washington Square Park, Union Square Park, Tompkins Square Park and Hudson River Park, among other public spaces. We will spend two days exploring the principles of making places through walking tours, presentations, case studies, PPS's Place Performance Evaluation Game, and the close examination of two contrasting neighborhoods. We will focus our observations and Placemaking techniques on the East and West Villages.
Identification and Management of Traditional Cultural Places	**Length/Cost:** 2 days, $375-425 **Intended Audience:** Managers responsible for compliance requirements; tribal leaders; preservation and environmental contractors; community planners. **Organization:** National Preservation Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	"Traditional cultural places" (TCPs) are important for the roles they play in community cultural traditions, beliefs, and activities. They must be considered in planning under the National Environmental Policy Act, the National Historic Preservation Act, Executive Orders 12898 and 13007, and other authorities. This seminar explores definitions and methods of identifying and managing impacts on TCPs.
Implications of Air Quality Planning for Transportation	**Length/Cost:** 3 days, $400 **Intended Audience: T**ransportation and air quality planners and engineers from State and local DOTs, MPOs, transit agencies, Federal agencies, and State and local environmental agencies. Others include transportation and environmental consultants, public officials and staff members, community and interest groups, as well as other stakeholders in the planning process. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142044.	After more than ten years of implementation, it is clear that more educational opportunities are needed to explain how clean air and transportation rules and regulations interrelate. The course goes beyond the statutes to explain how the integrated transportation and air quality planning process has been defined and reinforced over the past decade by regulations, guidance, and litigation. It provides a context for the various statutory and regulatory requirements, including a comprehensive review of the 1990 CAAA requirements, Environmental Protection Agency (EPA) policies related to transportation, and the process of developing State Implementation Plans (SIPs). It also provides information on emission trends, forecasting techniques, technology improvements, emerging issues, and demonstrates how transportation planning and air quality planning fit together under the Transportation Conformity Rule. Finally, it includes hands-on information based upon practitioners' experiences, a review of key court cases, and practical exercises.

Course Title	Logistics	Purpose/Objectives/Outcomes
Improving Pedestrian Safety at Uncontrolled Crossings	**Length/Cost:** 1.5 hours, $115-165 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	In 2003, the Transportation Research Board initiated a TCRP/NCHRP Project to research issues relating to pedestrian safety at uncontrolled locations. The presenter was part of the research team that ultimately prepared a report entitled "Improving Pedestrian Safety at Unsignalized Crossings". Appendices B through O, which contain a lot of the backup technical information obtained from the research and other sources, was prepared as a stand alone document. This course will provide a comprehensive discussion of the findings of this research project.
Improving Personal & Professional Communication	**Length/Cost:** 3 to 4 days, cost varies **Intended Audience:** People who must communicate technical information within their organization and/or with the public. **Organization:** Shipley Group **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Participants learn how to improve internal and external communication skills by; understanding the audience, developing a communication strategy, defining roles in the reporting of technical information, preparing and writing documents, and ultimately developing and preparing your presentation to meet your objective(s). Upon completion of this workshop, participants will be provided with the tools to be able to do the following: Communicate effectively; Collaborate with others; Create clear key messages; Develop communication strategies; Produce effective documents; Explain technical information to non-technical audiences; Plan and deliver effective presentations; Understand and succeed with the media.
Innovative Bicycle Treatments	**Length/Cost:** 1 hour, $75-125 **Intended Audience:** Transportation professionals (engineers and planners) who work for consulting firms, cities, counties, and state agencies involved in designing and maintaining roadways where bicycle facilities are needed. Designed for individuals with and without background or training in traffic engineering. **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	This webinar-on-CD will discuss options to provide better bicycle innovations. Many jurisdictions are employing new bikeway and bicycle parking design treatments and this course will identify some of the innovations and share information on their applications, advantages and disadvantages. 1 hour.

Course Title	Logistics	Purpose/Objectives/Outcomes
Instructor Development Course	**Length/Cost:** 3.5 days, $620 **Intended Audience:** This course is intended for instructors who will be delivering interactive training to adult learners and who anticipate teaching from a complete set of training materials (instructor manuals, participant workbooks, and visual aids) developed by training professionals. **Organization:** National Highway Institute **Offered:** On request. Course #FHWA-NHI-420018.	This course will provide new and experienced instructors the knowledge and skills to deliver more effective training. A skilled trainer will emphasize the use of experiential learning techniques, such as problem solving analysis, discussion, question and answer sessions, group activities, demonstrations, role-plays, etc. In essence, these learning activities tap into the knowledge and skills that an adult learner brings to the classroom and have the goal of meeting both the learning outcomes and the participants' expectations. Upon completion of the course, participants will be able to: Explain the five steps in the ISD system; Write a behavioral learning outcome; Present, measure, and review a learning outcome; Demonstrate at least two forms of interactivity and positive interpersonal skills; List five training techniques (e.g., Do not talk to the flip chart; do not stand in front of the projector; and do not stand in one place); Demonstrate how to reach the three styles of learning; Deliver a 15-minute training session that demonstrates adult learning principles. To learn more about NHI's Instructor Certification visit http://www.nhi.fhwa.dot.gov/resources/resources.aspx.
Integrating NEPA with Section 106	**Length/Cost:** 1 day, cost varies **Intended Audience:** NEPA practitioners, agency cultural resource specialists, and consultants. **Organization:** Environmental Training & Consulting International, Inc. **Offered:** Location varies, offered on request	Integrating cultural resources management and Section 106 compliance has never been simple. The new Advisory Council on Historic Preservation regulations include substantial changes from those in effect since 1984, and present a challenge to even the most experienced practitioners. Based on our award-winning in-house cultural resource management courses, this one-day workshop will bring you up to date on the most recent regulatory revisions, and let you take full advantage of their streamlining provisions. What You 'll Learn: Overview of 36 CFR 800, including changes from previous version; Definitions of terms such as undertaking, significance, and effect as used under the National Historic Preservation Act, and how they differ from similar terms used under the National Environmental Policy Act; The Section 106 process, step by step; Keys to preparing successful Memoranda of Agreement and Programmatic Agreements; Resources including Internet resources.
Interactive Highway Safety Design Model	**Length/Cost:** 2 days, $270 **Intended Audience:** Highway design project managers, planners, designers, and traffic and safety reviewers with at least one or two years of experience with highway design, preferably two-lane rural highway design. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-380071.	This course will instruct highway design project managers, planners, designers, and traffic and safety reviewers in the application of the Interactive Highway Safety Design Model (IHSDM) software and will provide guidance on interpretation of the output. IHSDM is a suite of software tools to evaluate safety of two-lane rural highways. The software, developed for FHWA, was released in 2003 after several years of research and development to provide state-of-the-art techniques for safety analysis. IHSDM contains five tools that can be used to apply the most recent safety analysis techniques in a relatively straightforward and automated manner. For more information about IHSDM, go to http://www.tfhrc.gov/safety/ihsdm/ihsdm.htm.

Course Title	Logistics	Purpose/Objectives/Outcomes
Introduction to Environmental Impact Assessment	**Length/Cost:** 6 units (5-7 hours each) over 6 weeks, free for government employees, $275 for consultants **Intended Audience:** Transportation professionals from transit agencies, metropolitan planning organizations, and departments of transportation with less than five years experience working with the environmental process relative to project development **Organization:** National Transit Institute **Offered:** Web-based course run over a six-week period. See website for currently scheduled courses.	The course introduces the environmental impact assessment process as required under the National Environmental Policy Act (NEPA). It reviews NEPA's legislative history and implementation by the Council on Environmental Quality (CEQ), details important considerations in the project planning stage, and provides an overview of the classes of action and FTA implementation as required by SAFETEA-LU Environmental Review Process Final Guidance. At the conclusion of this online course, learners will be able to: • identify key components of the National Environmental Policy Act, its implementing regulations, as well as FTA's supplemental procedures, and how they apply to various classes of actions considered by FTA • describe the process of the environmental impact assessment • distinguish key principles and methods of environmental analysis • identify relevant issues in the development and review of environmental documents for various projects relate FTA implementation procedures to the NEPA process
Introduction to NEPA and Transportation Decision-Making	**Length/Cost:** 6.5 hours, free **Intended Audience:** Staff from FHWA, State DOT (including consultants acting on behalf of the State), Federal and State environmental resource agencies, local government, and MPOs who participate in the transportation decisionmaking process. **Organization:** National Highway Institute **Offered:** Web-based course, register at: http://www.nhi.fhwa.dot.gov/training/regi_cours.aspx. Course #FHWA-NHI-142052.	This Web-based course is a basic introduction to FHWA's National Environmental Policy Act (NEPA) transportation decisionmaking process. It provides an overview of the environmental process, including the integration of social, environmental, and economic factors within the framework of existing laws, regulations, policies, and guidance for transportation project decisions. The course covers the requirements of NEPA as implemented by the Council on Environmental Quality, as well as FHWA's regulations and guidance for NEPA implementation and project decisionmaking. Separate lessons address such topics as purpose and need, alternatives development and analysis, impact analysis, public involvement, interagency coordination, mitigation, and documentation.
Introduction to Statewide Transportation Planning	**Length/Cost:** 2 days, free for government employees, $550 for consultants **Intended Audience:** New planners; urban planners; DOT staff actively involved in statewide planning; engineers assigned planning duties who lack academic background in planning; MPO/RPO and regional planning staff; Regional Development Commissions staff; transit agency staff; other Federal resource or regulatory agencies; and consultants. **Organization:** National Highway Institute, FHWA, Federal Transit Administration, National Transit Institute **Offered:** To be determined, delivery is through National Transit Institute	The course is a collaborative effort among the FHWA Office of Planning, the National Highway Institute, the Federal Transit Administration, the National Transit Institute and various statewide planning, transit and industry representatives to develop a basic–yet comprehensive–course that will serve as an introduction to statewide transportation planning. Designed as an instructor-led, 2-day presentation, the overall course objective is to transfer to participants the necessary knowledge and skills for them to constructively participate in the statewide transportation planning process.

Course Title	Logistics	Purpose/Objectives/Outcomes
Introduction to Transportation Conformity	**Length/Cost:** 3 days, free for government employees, $450 for consultants **Intended Audience:** New staff, senior staff who may not be familiar with the conformity process working in FHWA, FTA, EPA, DOTs, MPOs, state/county/local planning agencies, state and local air quality agencies, transit agencies and consultants. **Organization:** National Transit Institute **Offered:** Location varies, offered once per year	The Transportation Conformity course will present basic information about conformity requirements and the relationship of the transportation and air quality planning processes in order to prepare agency staff (federal, state and local) to participate in interagency consultation and work effectively in resolving conformity issues. Objectives: To develop a clear understanding of the dynamic relationship between transportation planning and air quality planning in the context of transportation conformity; To provide an overview of the transportation planning and project development processes and to show how these processes are linked to the State Implementation Plan (SIP) through the conformity requirements; To provide an understanding of the roles and responsibilities in inter-agency coordination and techniques to provide opportunities for public participation in the conformity process.
ITS Awareness Seminar	**Length/Cost:** 1 day, $200 **Intended Audience:** Traffic engineers, State, Federal and local transportation planners, MPOs, transit and highway operators, public safety responders, transportation management center (TMC) specialists, motor carrier managers, environmental groups, IT personnel, college and university faculty and students, consultants and contractors. ITS vendors, practitioners in ITS-related fields, such as those in financial, marketing, media and others who are increasingly valued ITS partners. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-137001. Also a web-based version for $50 at: http://www.citeconsortium.org/registration.html	This course provides an overall understanding of Intelligent Transportation Systems (ITS) and the ITS infrastructure. The course illustrates the ITS infrastructure components by showcasing those systems that are deployed around the country and discussing multimodal systems that will benefit from the use of the ITS infrastructure. Institutional and technical issues involved in deploying ITS infrastructure are also presented. Topics covered include planning, design, architecture, standards, procurement, installation and construction, operation and maintenance, and funding of ITS systems. The benefits associated with various types of ITS deployment are presented and explained. The one-hour executive summary developed for elected and appointed officials may be requested through the National Resource Center, or the FHWA Division.
Key Critical Thinking Skills for Strategic Problem Solving and Decision Making	**Length/Cost:** 2 days, $745 **Intended Audience:** **Organization:** North Carolina State University **Offered:** Raleigh, NC, offered once per year	In actuality, there are four unique critical thinking scenarios that are typically referred to as "problems." The critical thinking logic needed to effectively manage each situation is, in fact, different. This workshop covers the critical thinking skills necessary to effectively resolve issues in each of these areas. It is designed for application to the real world, and will utilize real world scenarios for hands-on practice. Examples: How to analyze complex situations; How to improve the diagnosis of problems; How to make the best possible decisions; How to prevent future problems when implementing plans, decisions, projects or strategies

Course Title	Logistics	Purpose/Objectives/Outcomes
Leadership Development for the Engineer	**Length/Cost:** 2 days, cost varies **Intended Audience:** Experienced managers, new supervisors, technical professionals moving into greater responsibilities, high-potential employees, and anyone who is in a position to influence either the day-to-day or strategic management of their organization. **Organization:** American Society of Civil Engineers **Offered:** Location varies, offered on request	"As we advance into the 21st century, the engineering manager must not only be technically competent but must possess the leadership skills to move an organization forward and to advance in his/her career. This updated seminar will help you to develop or expand your leadership skills. You will learn how to: successfully lead an organization or a department; understand yourself and your staff including generational differences; apply a leadership style which is appropriate to the situation; apply systematic decision-making processes while considering the critical role of intuition; lead change while maintaining motivation; apply the ""art"" of leadership or the ""discipline"" of management; effectively communicate and provide feedback considering the differences in the way men and women communicate; and form and lead effective teams. The seminar includes one hour of ethics training.
Leadership Development Online Course	**Length/Cost:** 7 hours, $366-499 **Intended Audience:** Civil engineers or other technical professionals in a leadership position, or those aspiring to move into a leadership role. **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	This is an online version of ASCE's very popular seminar "Leadership Development for the Engineer." This course will guide you through the steps required to become a successful leader in an engineering organization. You will develop or expand your leadership skills and obtain the tools needed for your success.
Linking Conservation and Transportation Planning	**Length/Cost:** 2 days, cost varies **Intended Audience:** **Organization:** Defenders of Wildlife, FHWA, NatureServe **Offered:** Location varies, no classes currently scheduled	The FHWA Project Development and Environmental Review Office, NatureServe and Defenders of Wildlife are hosting a workshop to improve linkages between conservation and transportation planning. This workshop will emphasize the use of information, tools and methods that can be shared between the transportation community, and the resource and regulatory agencies at the local, State, regional, and national levels. In particular this project will focus on using tools and information developed by NatureServe and its State Natural Heritage Program members, as well as linking transportation planning to other conservation approaches including State Wildlife Action Plans. At this workshop we will demonstrate how the information and tools presented can save money and time by streamlining transportation projects and planning. These workshops have concluded, but reports and documents from them are available on the website.

Course Title	Logistics	Purpose/Objectives/Outcomes
Linking Planning and NEPA: Towards Streamlined Decision Making	**Length/Cost:** 3 days for managers, 1 day for executives, free **Intended Audience:** Key Federal, State, and other managers with relevant responsibilities for particular geographic areas. Limited to representatives of the host State only. **Organization:** National Highway Institute, FHWA, Federal Transit Administration **Offered:** Location varies, offered on request. Course #FHWA-NHI-151041.	This is a two part series of facilitated workshops focused on identifying the current process for performing planning and NEPA studies in support of project-level decisions, and developing strategies for achieving greater integration in this work. Designed for Federal and State transportation and environmental resource agencies, participants will work together to build a framework for project development decision making that ensures environmental quality through a clear sequence of decisions made with the right information by the right people at each decision point. The first in the series is a 4-hour, facilitated, interagency executive session for key managers and directors that are involved in the planning and NEPA decision-making processes. At the end of this session, they will develop a charge for process change for their respective staff who will be participants in the subsequent managers' workshop. The managers workshop is for project managers and other key managers who participate in transportation planning and project development studies, as well as those who draft related documents. To see an example of how a state DOT has used the Linking Planning and NEPA training, see the Colorado DOT Linking Planning and NEPA website.
Making Social Impact Assessment Count for Planners and Resource Managers	**Length/Cost:** 2 days, $495 **Intended Audience:** Planners; government agency personnel; development workers for domestic and international donor organizations, extension and community development workers; as well as faculty and students in town and regional planning, environmental studies, engineering, the social sciences. **Organization:** Western Washington University **Offered:** Vancouver, Canada, offered once per year	Social Impact Assessment is the systematic analysis in advance of the likely impacts a proposed action (project, policy or plan) will have on the day-to-day life (environment) of persons and communities. The basic SIA course will provide the knowledge, understanding and technical skills to do social impact assessment at the community and project level for a variety of development and policy proposals.
Managing Transportation & Land Use Interactions	**Length/Cost:** 2 days, $225-375 **Intended Audience:** New and experienced planning staff in local, regional, and state agencies, and consultants. Also transportation engineers, project and agency managers, transit planners, community planners, decision-makers, and land developers. **Organization:** University of California Berkeley **Offered:** California, specific location varies, offered once per year	The transportation system influences the development of local land use patterns. Local land use decisions shape the demand for transportation services and improvements. Managing this interaction to achieve multiple goals is one of the more difficult problems for planners and engineers. This course covers how to create successful plans and projects, and when to make congestion improvements, including how to identify key feedback relations in your community; how to develop alternatives that balance competing goals and increase choice; and how to communicate the interactive nature of transportation and land use investments to decision-makers.

Course Title	Logistics	Purpose/Objectives/Outcomes
Mentoring	**Length/Cost:** 1 hour, $75-125 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	This webinar-on-CD begins by explaining the fundamentals of mentoring. Advice for successful mentoring follows. The advice is directed, as appropriate, to mentors and to mentees (protégés). Essentials of formal mentoring programs are explained and illustrated.
Metropolitan Transportation Planning	**Length/Cost:** 3 days, $400 **Intended Audience:** Planning, transportation planning, programming, or project development staff working or participating in the metropolitan transportation planning process. Including MPOs, State or local departments of transportation, transit agencies, or the Federal DOT. In addition, Federal or State resource and regulatory agencies. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-152069.	This course provides a general introduction and overview of the metropolitan transportation planning process, underscoring its relationship to informed decision making. Aspects covered include key elements of the planning process; planning requirements; visioning, goals, objectives and measures of effectiveness; program and project development; alternatives and tools for their analysis. OUTCOMES: • Explain why the metropolitan transportation planning process exists and why it is important • Identify the requirements of the metropolitan transportation planning process and describe the products • Identify the players in the process and describe their roles and responsibilities • Distinguish among vision, goals, objectives, and measures of effectiveness (MOEs) and describe the proper use of each • Explain how to identify transportation needs and problems and how to analyze and evaluate alternative strategies • Recognize the components of the transportation plan and the transportation improvement program • Explain the relationship between planning and project development.
NCI Charrette Planner Certificate	**Length/Cost:** 3 days, $800 **Intended Audience:** Public and private planning staff, development managers and advocacy group staff. **Organization:** National Charrette Institute and Virginia Tech University **Offered:** Falls Church, VA, see website for scheduled classes	This information is invaluable both for those who hire others to conduct charrettes and for those who will be conducting charrettes themselves. By the end of the program you will have practiced the complete process for planning a charrette. You will gain a practical, working knowledge of the most advanced tools and techniques used by the leaders of the field. Depending on your skill and experience level, upon completion of the course you will be able to host or conduct an NCI Charrette. Using the Case Study Method, You Will Learn Charrette Preparation Exercises and Charrette Facilitation: Meeting Planning and Facilitation Skills: meeting design, room set-up, kick-off meeting agenda planning exercise, facilitator's preventions, dealing with difficult people, orchestrating a meeting toward a win/win outcome; Hands-on Workshop: learn how to run an interactive public workshop for creating a shared vision.
NEPA and Transportation Decision Making	**Length/Cost:** 3 days, $400 **Intended Audience:** FHWA, State DOTs, Federal and State environmental resource agencies, local governments, and MPOs who participate in the transportation decisionmaking process. Recommend taking NHI 142052 Introduction to NEPA and Transportation Decisionmaking in advance. **Organization:** National Highway Institute	This course considers FHWA's policies and procedures for applying the National Environmental Policy Act (NEPA) to the project development and decisionmaking processes related to transportation facilities. The course examines the evolution of environmental policy and the integration of social, environmental, and economic factors into the framework of laws, regulations, policies, and guidance, which assist in achieving a decision on a transportation project that is in the best overall public interest. The course emphasizes using the Council on Environmental Quality and FHWA's regulations and guidance for implementing NEPA and Section 4(f) of the Department of Transportation Act, as well as initiatives for interagency coordination and streamlining the project development process. Also emphasized are public involvement, Title VI/Environmental Justice, FHWA's policy for mitigation and enhancement,

Course Title	Logistics	Purpose/Objectives/Outcomes
	Offered: Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142005.	and the role of transportation in achieving sustainable development.
NEPA Compliance and Cultural Resources	**Length/Cost:** 2 days, $375-425 **Intended Audience:** Managers responsible for compliance requirements; historic preservation, archaeological, and environmental consultants and planners. **Organization:** National Preservation Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Learn about environmental impact analysis, cultural resource management, and historic preservation responsibilities and relationships. Assess practical applications for effectively integrating the analyses required by the National Environmental Policy Act, related environmental regulations, and the National Historic Preservation Act.
NEPA: What Every Engineer and Project Manager Should Know about NEPA	**Length/Cost:** 2 days, cost varies **Intended Audience:** Project engineers and managers who work on projects that receive partial federal funding, are on federal lands or require environmental impact analysis. Designed for individuals with and without background in NEPA. **Organization:** American Society of Civil Engineers **Offered:** Location varies, offered on request	If your project receives federal money or is on federal land you need to comply with the National Environmental Policy Act (NEPA). Failure to follow required NEPA procedures and analysis can significantly delay your project and increase your costs. This seminar provides training on NEPA basics: how to navigate the process effectively; what different federal agencies may require of you and why early contact with them is critical; and integration with other laws, such as the Clean Water Act and SAFETEA-LU. We brief you on the five most common delays and what you can do to prevent them. The seminar provides sound information on what you need to do, and when, to ensure that you complete your project on schedule.
Participatory Strategic Planning	**Length/Cost:** 2 days, $545 **Intended Audience:** Executives and organizational leaders who depend on others for successful implementation of the organizations strategies: Senior administrators, managers, private consultants, community coordinators, policy analysts, board members, educators and individuals responsible for the design and facilitation of strategic planning efforts in organizations. Prerequisite: Group Facilitation Methods. **Organization:** Institute of Cultural Affairs **Offered:** Location varies, offered 25 times per year (see website for scheduled classes)	Participatory Strategic Planning presents a structured planning process which incorporates the workshop method for building consensus, the focused conversation method for effective group communication and an implementation planning process for turning ideas into productive action and concrete accomplishments. - Enhance your capacity for creative strategy building. - Enable a group to come to a common vision and create a "participant-owned" plan that deals with the realities blocking the group. - Experience and practice the complete strategic planning process of vision, contradictions, strategic directions, and implementation. - Discover how to weave together the basic tools into longer formats and retreat settings.

Course Title	Logistics	Purpose/Objectives/Outcomes
Pedestrian Facility Design	**Length/Cost:** 1.5 days, $310 (includes a copy of the AASHTO guide) **Intended Audience:** Engineers with planning, design, construction, or maintenance responsibilities; pedestrian and bicycle specialists; planners; disability and orientation specialists, transportation planners, architects, landscape architects, as well as decision makers at the project planning level. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142045.	This course was developed to provide information and application opportunities for those involved in the design of pedestrian facilities. The Americans with Disabilities Act (ADA) requires newly constructed and altered sidewalks to be accessible and usable for people with disabilities, and accessibility improvements need to be implemented for existing facilities. To emphasize the importance of planning for pedestrians, the instruction centers on two case examples: one involving corridor design issues, one involving intersection design issues. Participants are engaged through lecture, discussion, video demonstrations of problem areas in corridors and intersections, small group problem identification, and the development of design alternatives.
Planning for Effective Public Participation	**Length/Cost:** 2 days, $630 **Intended Audience:** Those working in the field of citizen engagement, public involvement or stakeholder relations; government, private sector or a not-for-profit. Designed for beginning to intermediate level professionals who wish to master the basics of how to design and deliver a public participation program. **Organization:** International Association for Public Participation **Offered:** Location varies, offered 2 to 3 times per month (see website for scheduled classes)	This two-day module of the IAP2 Certificate Program provides an introduction to the foundations of effective public participation programs. IAP2 has worked with practitioners from around the world to develop foundational tools that transcend national and cultural boundaries. Even advanced practitioners will find useful tools and techniques to assist in working with the public and clients to establish effective public participation. These tools are presented in an interactive and experiential learning environment that provides students with the opportunity to explore their own public participation challenges with their instructor and peers. Students use IAP2's Public Participation Spectrum to demonstrate the importance of setting clear objectives and a promise to the public and how to determine the appropriate level of public participation. Other important topics include the practical application of the IAP2 Core Values for Public Participation and using the IAP2 Code of Ethics as a guide to both practitioners and clients.
Positive Public Involvement	**Length/Cost:** 2 days, cost varies **Intended Audience:** Positive Public Involvement is for everyone who works on projects or programs that have some public component, whether or not you have direct contact with the public through meetings or presentations. **Organization:** Environmental Training & Consulting International, Inc. **Offered:** Location varies, offered on request	What You 'l l Learn: Legal and practical benefits of Positive Public Involvement; Public Involvement vs. Public Education, Risk Communication, Public Relations; Doing it right the first time – legal sufficiency vs. long-term effectiveness; How to get a more positive response from your public; Developing rapport with your public; Identifying your public; What does your public really want? Identifying public values, desires, and criteria; Identifying your Public Involvement outcomes; Building conflict prevention/resolution into your Public Involvement program; Developing a Public Involvement strategy: Using these skills back on the job.

Course Title	Logistics	Purpose/Objectives/Outcomes
Powerful Planning Using NEPA and the Facilitated Planning Approach	**Length/Cost:** 3 to 5 days, cost varies **Intended Audience:** Can be tailored to beginner and advanced NEPA practitioners, reviewers, and managers for the specific agency, and can be effectively used to improve interdisciplinary working relationships within the agency and with cooperating and commenting agencies. **Organization:** Environmental Planning Strategies, Inc. **Offered:** Location varies, offered on request	This interactive workshop, individually tailored for the Federal/state agency requesting training, focuses on conducting effective and practical NEPA planning processes and impact analyses using the proven NEPA Facilitated Planning Approach, ensuring complete and adequate planning strategies and environmental impact analyses. The emphasis on practical planning processes and strategies, based on powerful and readily implementable planning approaches, includes CEQ regulations and guidance, the agency NEPA procedures, court decisions and precedents, and effective planning tools and processes. The workshop uses a combination of lecture, facilitated discussion, and "real life" case studies, tailored to each individual audience, to ensure that participants learn NEPA and effective methods of environmental planning and document preparation that can be used directly in their work.
Presentation Skills for Engineers and Technical Professionals	**Length/Cost:** 4 hours, $192-612 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	A unique skill-building course to help you prepare and deliver clearer, more persuasive presentations to clients, sales prospects, and internal audiences. This course will help you become a stronger, more confident presenter and how to present technical content to non-technical audiences in a compelling way. It will show you how to overcome your fear of presenting and public speaking, become a better communicator, and develop a strong and interesting speaking voice. The course involves a three-step process for handling questions from the audience and how to differentiate between effective and ineffective use of presentation visuals.
Presentation Skills Training for Civil Engineers	**Length/Cost:** 2 days, $1,085-1,295 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Location varies, offered twice per year	In this interactive workshop for engineers, you will learn how to hone your presentation skills. While speech mechanics and delivery (content organization, eye contact, gestures, vocal variety, etc.) will be discussed, this class is specifically geared to the presentation of technical and quantitative information. You will improve your ability to give presentations that are clear, compelling, concise and credible whether it be at a public forum or to a client.
Project Management: Tools, Principles and Practices	**Length/Cost:** 3 days, $1,395 **Intended Audience: P**roject managers whose job involves engineering, data processing, information technology, construction, research and development, manufacturing, maintenance, corporate planning, finance, marketing, and quality. **Organization:** North Carolina State University **Offered:** Raleigh, NC, offered twice per year	Take the guesswork out of project management! If managing projects to get results is important to your organization, you can't afford a seat-of-the-pants approach. Here are proven tools and techniques used by world-class companies to make their projects sizzle! With these methods, your projects will come in on time, on budget, and at the right level of performance. This is not a theoretical, academic program, but a true nuts-and-bolts, no-nonsense approach to project management, taught by a seasoned project manager. Your instructor applies the latest methods of learning technology to accelerate your learning and increase your retention so that you can apply these important tools. We will simulate a project through four group exercises that help you see how all techniques relate to each other.

Course Title	Logistics	Purpose/Objectives/Outcomes
Public Involvement in the Transportation Decision-Making Process	**Length/Cost:** 3 days, $400 **Intended Audience:** Federal, State, and local transportation agency staff, MPO personnel, transit operators, consultants, and others who are responsible for planning, implementing, or participating in any phase of the public involvement process. **Organization:** National Highway Institute, FHWA, Federal Transit Administration, National Transit Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142036.	Public involvement is much more than public hearings and involves creative thinking, the willingness and ability to interact openly, and sensitivity to the public's preferred forms of communication and participation. Public involvement is about giving the public an opportunity to influence transportation decision making. The public should have a role in every phase of decision making, including the design of the public involvement plan itself. Successful public involvement means addressing the public's procedural, psychological, and substantive needs. By focusing on interests–rather than positions–public involvement can become more meaningful, as well as useful.
Public Participation for Decision Makers	**Length/Cost:** 1 day, cost varies **Intended Audience:** Executives, mangers and decision makers interested in integrating public participation into projects. **Organization:** International Association for Public Participation **Offered:** Location varies, offered 1 or 2 times per year (see website for scheduled classes)	IAP2's Public Participation for Decision Makers helps decision makers get the best value from a public process. The session looks at the Foundations from a decision makers' point of view and offers a perspective on how public participation can be integrated into the overall project plan. It examines at the costs and benefits of public participation, discusses when and why to not involve the public in an organizational decision, and emphasizes the importance of both the decision being made and the promise to the public about their involvement in that decision process. Finally, the session provides an overview of what the decision maker should know about the public participation practitioner's role.
Safety and Operational Effects of Geometric Design Features	**Length/Cost:** 2 days, $320 **Intended Audience:** State and local highway engineers and consultants involved in the design of both two-lane rural and/or multilane highways. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-380070A.	This 2-day course includes both 2-lane and multi-lane highways and provides a proven methodology for the safety performance of geometric design decisions in a like manner to that of predicting capacity and level of service based upon large scale definitive research. The crash prediction models for total crashes and cross-section related crashes based upon lane width, shoulder width, roadside hazard, traffic volume (exposure) and other characteristics are presented. Examples of safety performance prediction are presented for highway segments. Discussion of research and the interactive effects of lane and shoulder widths, hazard rating, and access density (driveways) on safety performance are presented. Each student receives a copy of the "Safety Effects of Highway Design Features" manual. OUTCOMES: * Recognize the safety effects of geometric design features; * Predict the safety performance of geometric design features; * Compare alternative designs based upon an assessment of the safety effects of geometric design features

Course Title	Logistics	Purpose/Objectives/Outcomes
Safety Effects of Geometric Design Features for Two-Lane Rural Highways	**Length/Cost:** 1 day, $220 **Intended Audience:** State and local highway engineers and consultants involved in the design of two-lane rural highways. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-380070A.	This one-day course provides a proven methodology for the safety performance of geometric design decisions in a like manner to that of predicting capacity and level of service based upon large scale definitive research. The crash prediction models for total crashes and cross-section related crashes based upon lane width, shoulder width, roadside hazard, traffic volume (exposure) and other characteristics are presented. Examples of safety performance prediction are presented for highway segments. Discussion of research and the interactive effects of lane and shoulder widths, hazard rating, and access density (driveways) on safety performance are presented. Each student receives a copy of the "Safety Effects of Highway Design Features for Two-Lane Rural Highways" manual. OUTCOMES: * Recognize the safety effects of geometric design features; * Predict the safety performance of geometric design features; * Compare alternative designs based upon an assessment of the safety effects of geometric design features
Safety Effects of Geometric Design Features for Multilane Highways	**Length/Cost:** 1 day, $220 **Intended Audience:** State and local highway engineers and consultants involved in the design of multilane highways. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-380070B.	This course provides proven methodology for the safety performance of geometric design decisions for multilane highways in a like manner to that of predicting capacity and level of service based upon large scale definitive research. The crash prediction models for total crashes based upon lane width, shoulder width, roadside hazard, traffic volume (exposure) and other characteristics are presented. Examples of safety performance prediction are presented for highway segments. Discussion of research and the interactive effects on safety performance for median width and barriers, of access (driveways) and side streets and intersection turning lanes are presented. Each student receives a copy of the "Safety Effects of Highway Design Features" manual. OUTCOMES: * Recognize the safety effects of geometric design features; * Predict the safety performance of geometric design features; * Compare alternative designs based upon an assessment of the safety effects of geometric design features.
Safety Conscious Planning: Planning it Safe	**Length/Cost:** 2 days, $270 **Intended Audience:** Transportation planning and safety professionals representing MPOs, State DOTs, transit agencies, FTA, FHWA, local planning organizations, motor carrier safety offices, law enforcement; State highway safety specialists; representatives from State Governors' highway safety offices, infrastructure programs, public utility commissions, and consultants. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-151042.	This course was jointly developed in cooperation with the FTA and the National Transit Institute. This course is designed to identify opportunities for improving the manner in which safety is integrated as a key planning factor and performance measure in all transportation plans and programs. OUTCOMES:• Identify the benefits of addressing safety early and throughout the transportation planning process • Identify the key safety factors of surface transportation modes (e.g., bus, rail transit, passenger motor vehicles, commercial vehicles and commercial motor carriers, walking, and bicycle) • Discuss data availability, analysis, and performance measures to address local, corridor, and area-wide safety problems • Identify safety strategies related to users, vehicles, infrastructure, and system operations • Illustrate approaches for including and evaluating transportation safety projects in transportation plans and programs • Identify key traditional and nontraditional safety partners and opportunities for collaboration • Discuss how to organize and implement an effective safety-conscious plan and how to monitor progress.

Course Title	Logistics	Purpose/Objectives/Outcomes
Scoping, Public Involvement and Environmental Justice	**Length/Cost:** 2.5 days, $750-825 **Intended Audience:** **Organization:** Duke Environmental Leadership Program **Offered:** Durham, NC, offered once per year	Scoping is an analytical exercise that targets key issues. It is the first step in the NEPA process where a manager can be successful at making the process cost less, count more in decision-making and ensure that the public participates in the process. However, if scoping is treated as a public relations exercise or a mere legal requirement to be completed it is likely the manager will lose the opportunity to create a structured study that will save time, money and be relevant to decision-making. Through a combination of presentation, case studies, role plays and activities, participants will learn the skills necessary to develop a scoping effort that produces meaningful analyses, saves their agency/client money and ensures full public participation in decision-making.
Section 106: An Introduction	**Length/Cost:** 3 days, $525-575 **Intended Audience:** Cultural resource and environmental consultants; federal, state, local, and tribal officials and planners. **Organization:** National Preservation Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Learn the basics of project review under Section 106 of the National Historic Preservation Act. This seminar emphasizes practicalities-how to avoid pitfalls and victimization by myths. Discuss recent changes in regulations and procedures, with an emphasis on coordination with the National Environmental Policy Act and other laws.
Section 4(f) Compliance for Transportation Projects	**Length/Cost:** 2 days, $375-425 **Intended Audience:** Federal and state managers and consultants preparing compliance documents for federal DOT actions under Section 4(f), NEPA, and/or NHPA. **Organization:** National Preservation Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Section 4(f) of the DOT Act of 1966 is triggered by projects funded or approved by a U.S. DOT agency that propose the use of historic property or land from a publicly owned park, recreation area, or refuge. Examine the stringent approval standards of this substantive law and discuss ways to better integrate and streamline Sections 4(f) and 106 with the National Environmental Policy Act (NEPA) process.
Skills, Techniques, and Strategies for Effective Negotiation for Engineers	**Length/Cost:** 2 days, $1,085-1,295 **Intended Audience:** Business development managers, financial managers, project managers, principals, and other key firm leaders involved in formal negotiations with clients or subconsultants, or as part of the behind the scenes contract planning team for a design consulting firm, as well as those who do business with design consulting firms. **Organization:** American Society of Civil Engineers **Offered:** Location varies, offered twice per year	Negotiation, as the process to manage or resolve conflict, is much more than a method to buy and sell products or services. It is a process that affects all human interaction. Most engineers find themselves being at the mercy of their clients because they do not know how to negotiate. Learn the underlying principles of win-win negotiation and the techniques to achieve it. "Practice makes (near) perfect."

Course Title	Logistics	Purpose/Objectives/Outcomes
Socioeconomic Impact Analysis Under NEPA	**Length/Cost:** 2.5 days, $750-825 **Intended Audience:** **Organization:** Duke Environmental Leadership Program **Offered:** Durham, NC, offered once per year	This course will address the need and legal mandate for socioeconomic impact assessment, which includes the National Environmental Policy Act, the Executive Order on Environmental Justice, and case law. It will address the role that human communities play in responding to, adapting to, and resisting change brought on by major federal actions. With a focus on hands-on experience, the course instructors will assist participants in all steps in the preparation of socioeconomic impact baselines and projections. Special emphasis will be on data, techniques and models available through electronic media (principally the Internet and CD-ROM). In addition, guidelines and principles for socioeconomic impact assessment will be presented. In essence, the course will show how to count what really matters instead of what is easy to count.
Succeeding at Internal Communications	**Length/Cost:** 2 hours, $150-200 per site **Intended Audience:** **Organization:** American Public Works Association **Offered:** Webcast, offered once per year	Today's business communications are becoming more and more casual and brief—which opens the door for increased misunderstanding. Add to the mix—communicating through the organizational hierarchy—and conveying critical business information turns into a whole new game. Get tips from experts in Communication on: • Strengthening the weak links in the communication chain • Identifying Gatekeepers of Information • Recovering "filtered out" messages • Controlling and organizing e-mails • Getting officials to "hear" your message
Team Building for NEPA Specialists	**Length/Cost:** 2 days, cost varies **Intended Audience:** Environmental coordinators, team leaders, resource specialists and decisionmakers involved in preparing NEPA documents. **Organization:** Shipley Group **Offered:** Location varies, offered on request	This workshop is tailored to meet the needs of the participants. The basic format of the interactive workshop includes the following components: Determining Who Should Be Part of the Interdisciplinary Team; Determining the Contents of a Scoping Document; Managing the Meetings; Recording Key Information; Evaluating the Strengths and Weaknesses of the Team. Upon completion of this workshop, participants will be able to do the following: Choose or appoint an Interdisciplinary Team (IDT) leader and IDT members to satisfy legal requirements; Jointly develop an IDT scoping document; Conduct IDT meetings; Use sound review techniques; Provide timely updates; Record team meetings; Arrange for feedback on the NEPA analysis process, documentation, and the IDT process.
Team Leadership: Tools and Methods for Creating Strong, Effective Leaders	**Length/Cost:** 2 days, $545 **Intended Audience:** Group leaders, anyone dealing with self - directed work teams, senior managers, executive directors, consultants, school principals. Prerequisite: Group Facilitation Methods. **Organization:** Institute of Cultural Affairs **Offered:** Location varies, see website for scheduled classes	After Taking This Course You Will Be Able To: Enhance teamwork on the job; Develop effective task forces and committees; Motivate and sustain coalitions and partnerships; Launch and complete short and mid term tasks; Maximize participation in any team project; Gain the confidence needed to let a team do its job; Have one hour of free coaching after the course. In every organization, people talk about "teamwork". About one quarter of the organizations in North America are actually experimenting with "self-directed work teams". Of those, how many experiments will be successful? Success or failure with teamwork depends in large part on the level of commitment to real participation and the methods and tools to make it happen.

Course Title	Logistics	Purpose/Objectives/Outcomes
Techniques for Effective Public Participation	**Length/Cost:** 2 days, $630 **Intended Audience:** Those working in the field of citizen engagement, public involvement or stakeholder relations; government, private sector or a not-for-profit. Designed for beginning to intermediate level professionals who wish to master the basics of how to design and deliver a public participation program. **Organization:** International Association for Public Participation **Offered:** Location varies, offered 2 to 3 times per month (see website for scheduled classes)	This two-day module in IAP2's Certificate Program in Public Participation provides an introduction to a range of practical tools and techniques used at all five levels of IAP2's Public Participation Spectrum. It gives course participants an opportunity to try out or observe a number of specific techniques including World CafÈ, Interviews, Samoan Circle, Citizens Jury and Advisory Group. It includes overviews of more than 20 tools and techniques tested and used by public participation practitioners around the globe. The course is designed as a primer and is suitable for beginning to intermediate level practitioners and those who want a review of basic group process techniques. Interactive exercises and practical tips are used to enliven the basic theory and reference materials presented throughout the two-day session and reinforce skills that participants can put to immediate use. Students learn how to create effective forums for dialogue and how to avoid the many problems encountered in traditional public meetings.
The CMAQ Program: Purpose and Practice	**Length/Cost:** 2 days, $270 **Intended Audience:** Staff from State and local transportation agencies; State and local air quality agencies; MPOs, FHWA, FTA, EPA, and DOE. Clean Cities coordinators, potential project sponsors from the public and private sectors, and consultants working in transportation/air quality. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142043.	This is a newly developed course in concert with the EPA, Department of Energy, and Federal Transit Administration. This course provides an overview of the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, a $14 billion funding program dedicated to improving air quality in the country's nonattainment and maintenance areas. The course explains the underlying principles of the CMAQ program, including how it fits within the overall Federal-aid Highway Program; the programs objectives under Title 23 of the United States Code; and its relationship to the Clean Air Act and air quality planning. Finally, the course will describe eligibility for the CMAQ program, reporting requirements, and discuss how the program is being implemented across the country.
Thinking Strategically -- The Plan, The Process, The Reality	**Length/Cost:** 2 hours, $150-200 per site **Intended Audience:** **Organization:** American Public Works Association **Offered:** Webcast, offered once per year	Strategic thinking is the new mantra associated with healthy growth, thoughtful planning, and the creation of sustainable and effective public works organizations. Learn how strategically approaching the delivery of public works services, the delivery of public works projects, and the development of important public works policies can improve the acceptance, appreciation, and success of public works services and initiatives. Find out: • Why…thinking strategically is an essential core competency for today's public works professional • What…thinking strategically means in terms of your ability to think, act and influence • How…strategic planning can improve organizational effectiveness by creating alignment and a common understanding for what's important and why, throughout your agency

Course Title	Logistics	Purpose/Objectives/Outcomes
ToP Secrets of Implementation	**Length/Cost:** 2 days, $545 **Intended Audience:** Consultants, facilitators, organizational change agents, social change agents, community workers, planners, project managers. Prerequisite: Group Facilitation Methods. **Organization:** Institute of Cultural Affairs **Offered:** Location varies, offered about 13 times per year (see website for scheduled classes)	Do your clients have difficulties sustaining a plan once it has been initiated? Do you sometimes have difficulties helping your clients stay on track, bring new people into a team and then bring closure? This course is about keeping plans and projects alive, relevant, doable and achievable. There is a large and powerful component for peer mentoring in this course. After taking this course you will be able to: Understand and anticipate the ups and downs of the implementation journey; Initiate dynamic plans; Sustain momentum in plans that the team has created; Review and reposition projects that are in process; Bring closure to plans and celebrate the team's work.
Tort Liability & Risk Management	**Length/Cost:** 1 day, cost varies **Intended Audience:** State and local roadway engineers and technicians (involved in design, construction, traffic operations, and maintenance), public works directors, roadway maintenance supervisors, and elected officials. **Organization:** Maryland Transportation Technology Transfer Center **Offered:** See website for scheduled classes	This workshop provides an overview of the legal duties and responsibilities of roadway personnel. Key legal concepts relating to the liability of roadway agencies are reviewed from a risk management standpoint. Common types of claims/lawsuits brought against street departments and highway agencies are identified through examples/case studies. Examples include traffic control devices, work zones, roadway and shoulder surface conditions, sight distance, and pedestrian incidents. Risk management principles, aimed at: (1) reducing/preventing crashes and claims and (2) helping agencies defend claims, will be highlighted. Practical risk management activities will be identified.
Tort Liability & Risk Management - Bicycle and Pedestrian Design	**Length/Cost:** 1 hour, $50 **Intended Audience:** **Organization:** Redvector.com **Offered:** Web-based course	Planning for bicycle and pedestrian travel is a somewhat new field of study, and yet it also involves planning and engineering techniques that have been around for many years. This 1-hour online course explores the issues of tort liability and risk management as it relates to pedestrian and bicycle designs. Since most highway professionals are not routinely trained to design for the specific requirements of pedestrians and bicyclists, mistakes are common. The result is increased risk, which is often not identified until crashes occur. Training is especially important since many engineers and planners do not bicycle or walk extensively under the conditions for which they design. This course does provide some examples where lawsuits have been filed based on action of agencies and based on inaction of agencies.
Traffic Calming - 2 Part Series	**Length/Cost:** 2 hours, $149-249 **Intended Audience:** **Organization:** American Society of Civil Engineers **Offered:** Seminar on CD	Although agencies have been using traffic calming strategies for many years, the results have been mixed. Many agencies failed to put into place a comprehensive set of procedures for processing requests from the public to address neighborhood traffic management issues. This webinar-on-CD provides information on how to establish a neighborhood traffic management process including the development of a manual, how this process should be administered, the issues involving the primary stakeholders, and where the pitfalls lie. Includes a case study.

Course Title	Logistics	Purpose/Objectives/Outcomes
Traffic Calming - Bicycle and Pedestrian Design	**Length/Cost:** 2 hours, $100 **Intended Audience:** **Organization:** Redvector.com **Offered:** Web-based course	Planning for bicycle and pedestrian travel is a somewhat new field of study, and yet it also involves planning and engineering techniques that have been around for many years. This series of courses provides the student with current information on pedestrian and bicycle planning and design techniques, as well as practical lessons on how to increase bicycling and walking through land use practices, engineering measures, and a variety of other urban and rural design procedures. This 2-hour interactive online course explores the principle of traffic calming and provides a variety of studies, design details, and photographs of areas where traffic calming has been effectively used in the United States and in Europe. Along with the advantages of traffic calming, the text describes mistakes that practitioners have sometimes made in implementing traffic-calming techniques. This course includes a multiple-choice test at the end.
Traffic Calming Seminar	**Length/Cost:** 1 day, free **Intended Audience:** Transportation professionals **Organization:** Institute of Transportation Engineers **Offered:** Web-based course	Traffic Calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users. ITE and FHWA developed a 1-day seminar for transportation professionals on Traffic Calming. These seminar materials are intended for use by LTAP centers and other professionals interested in educating others on the subject. This section of the traffic calming Web site allows you to view the slide show on your Web browser or download the full PowerPoint presentation along with instructor's notes for individual use.
Traffic Calming: Strategies that Work	**Length/Cost:** 2 days, $245-435 **Intended Audience:** Transportation engineers and planners from both public and private agencies. No previous experience with traffic calming is required. **Organization:** University of California Berkeley **Offered:** California, specific location varies, offered once per year	This hands-on, practice-focused course provides "real-world" advice on how to design, install, and operate a wide range of effective traffic calming devices. The course reviews case studies from US communities and provides the student with an interactive learning experience. Emphasis is placed on the legal and design aspects of traffic calming in a California context as well as on how to manage community relations.
Transit Noise and Vibration Impact Assessment	**Length/Cost:** 3 days, free for government employees, $850 for consultants **Intended Audience: P**ractitioners who conduct noise and vibration analyses, those who prepare and review environmental impact assessments for transit projects, and managers overseeing the environmental review process for a major project. **Organization:** National Transit Institute **Offered:** Location varies, see website for scheduled classes	The goal of the course is to present FTA's procedures and methods for predicting and assessing noise and vibration impacts from proposed mass transit projects. The training modules in this three-day course closely follow the procedures contained in FTA's recently updated guidance on the subject (Transit Noise and Vibration Impact Assessment, May 2006). The course gives an overview of the environmental review process and how noise and vibration assessment fits into FTA's planning and project development processes. Fundamentals of noise and vibration are discussed along with the specific metrics and impact criteria that are used in noise and vibration assessments. The emphasis is on predicting impacts from operation of new transit systems; however, construction impacts are also covered. The course covers all the typical transit modes as well as multi-modal highway/transit projects. A number of class exercises and case studies are brought in to reinforce the concepts, procedures, and practices introduced in the course. Ample time is allocated toward the end of the session to discuss attendees' questions and issues related to specific projects.

Course Title	Logistics	Purpose/Objectives/Outcomes
Transit Planning	**Length/Cost:** 5 days, $1,595 **Intended Audience:** Staff members who are moving into planning responsibilities and require some formal training, managers without a background in transit planning. **Organization:** National Transit Institute **Offered:** Location varies, see website for scheduled classes	Led by experienced instructors well known for their transit expertise, and utilizing the most comprehensive methods of instruction including case studies, simulations, group exercises, workshops and presentations, the Transit Planning program gives you the opportunity to: Explore innovative service designs and non-traditional concepts in transit planning; Learn to successfully design and evaluate alternative service plans; Discover how to collect and utilize valuable data for measuring and monitoring performance; Learn about service changes that minimize costs and maximize customer benefits; Explore ideas for successful transit terminals and on-street facilities
Transportation and Land Use	**Length/Cost:** 3 days, free for government employees, $650 for consultants **Intended Audience:** Transit operators, MPO staff, Federal employees, state DOT planners and transportation specialists, city and county engineers and planners, resource agency staff and consultants. Also, elected officials, regulatory agency staff, local zoning officials, site designers, citizen activists, developers, media representatives, and business leaders. **Organization:** National Transit Institute **Offered:** Location varies, offered 3 times per year, see website for scheduled classes	Transportation and Land Use is a three-day course that is designed to help practitioners develop a multimodal transportation system that supports desired land uses and help shape land uses to support the transportation system. The course will assist participants in understanding the relationships between transportation and land use; the processes through which transportation and land use issues can be jointly addressed; and implementation steps to ensure that transportation and land use systems are designed in a compatible, mutually supportive manner. Objectives: Explain how transportation decisions affect land use, growth patterns, and related community impacts on both regional and local scales; Explain how land use patterns affect peoples' travel patterns and the overall performance of the transportation system; Describe the various transportation planning processes and how land use considerations can be integrated into these processes; Describe local comprehensive planning and land use regulatory activities, and how the process and outcomes of these activities can support local and regional transportation objectives; Identify the full range of stakeholders that should be involved in transportation and land use planning and decision making, and describe methods for involving these stakeholders; Describe methods that are available for implementing coordinated transportation and land use strategies; Identify analytical tools that are available for measuring and forecasting the impacts of transportation and land use decisions.
Transportation Asset Management	**Length/Cost:** 1 day, $200 **Intended Audience:** Senior-level and mid-level managers from State DOTs and other transportation agencies, who typically have the responsibility for decision-making in one or more areas addressed by transportation asset management. Also for those who manage or provide critical information to senior managers, or who have direct responsibility for meeting specific transportation system performance or program delivery targets. **Organization:** National Highway Institute **Offered:** Location varies, offered on request. Course #FHWA-NHI-131106.	Transportation asset management is a strategic approach to managing physical transportation infrastructure. This introductory course covers the principles, concepts, components, techniques, and benefits of asset management. The materials are based on the AASHTO's "Transportation Asset Management Guide" that was produced under the National Cooperative Highway Research Program (NCHRP) Project 20-24(11). This course supports, complements, and builds familiarity with using the guide and illustrates asset management "best practices" in key functions of a transportation agency's resource allocation and utilization: policy development, planning and programming, program delivery, operations, and use of information and analytic tools. A self-assessment process is provided for transportation agencies to benchmark current asset management practices and identify potential areas for further enhancement and implementation. A 35-minute module at the beginning of the course provides a concise overview of asset management that is suitable for executives.

Course Title	Logistics	Purpose/Objectives/Outcomes
Transportation NEPA for Department of Transportation Specialists	**Length/Cost:** 3 to 4 days, cost varies **Intended Audience:** NEPA coordinators, resource specialists, district engineers and other DOT professionals who must understand the NEPA process and how it applies to transportation projects. **Organization:** Shipley Group **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes)	Participants develop an understanding of NEPA and transportation decisionmaking, and skills to document decisions and their rationale. They learn to identify the appropriate form of environmental documentation and the appropriate level of detail. Through practice they learn to organize and write well-designed, consistent, and analytic EISs/EAs that clearly and concisely present managerial information to decisionmakers and the interested public. Upon completion of this workshop, participants will be able to do the following: Understand integrated, shared decisionmaking as a context for environmental documentation; Produce, direct, contribute to, or review environmental decision documents that illuminate the decisionmaking thought process and serve as a management tool; Help decisionmakers make an informed, reasoned, legally defensible decision and help the interested and affected public respond effectively.
Transportation Planning/Site Impact Analysis	**Length/Cost:** 6 hours, $250 **Intended Audience:** Participants are expected to have a grasp of both algebra and English. **Organization:** Institute of Transportation Engineers **Offered:** Web-based course, register at: http://www.ite.org/emodules/source/orders/index.cfm	This course is part of the planning series and has been developed as a guided tutorial to assist transportation professionals in identifying the steps and tools involved in traffic access and impact studies for site development. A case study is used to illustrate the steps in the process. Upon completion, you'll be able to: Undertake a site impact analysis; Collect required traffic data; Use appropriate analysis tools; Interpret results; Suggest improvements; and Prepare a full report.
Using Design Flexibility to Achieve Context Sensitive Solutions **Materials:** Slides	**Length/Cost:** 1.5 hours, free **Intended Audience:** This program is intended for transportation professionals interested in CSS, as well as advocates and stakeholders who want to understand more about the roadway design process. **Organization:** Gary Toth (Project for Public Spaces) and Jeffrey Shaw (FHWA) **Offered:** Once to date, webinar.	ContextSensitiveSolutions.org and the Federal Highway Administration are conducting a free webinar on September 29, 2008, 2:00-3:30 PM EST. Gary Toth, Senior Director of Transportation Initiatives at Project for Public Spaces and former Director of Project Planning and Development at New Jersey Department of Transportation, will discuss the importance of flexible design in achieving context sensitive solutions and a variety of methods for finding the flexibility that exists in most roadway design manuals. These strategies include selecting appropriate design controls, such as design speed and design vehicle, and making careful choices about traffic projections and level of service targets. The webinar will also cover tort liability and how design flexibility can allow for proactive roadway designs that fit into their context.

Course Title	Logistics	Purpose/Objectives/Outcomes
Water Quality Management of Highway Runoff	**Length/Cost:** 2 days, $270 **Intended Audience:** Individuals involved with managing highway runoff water quality, including Federal, State and local environmental and maintenance specialists, hydraulic and design engineers, State and local regulators, consultants, and others involved in transportation-related water quality issues. **Organization:** National Highway Institute **Offered:** Location varies, offered on request or open enrollment (see website for scheduled classes). Course #FHWA-NHI-142047.	Understanding the legal responsibilities (Total Maximum Daily Loads, NPDES Phase II, Section 404, etc.), terminology, and the general roles of players in the regulatory process is critical in order to properly plan for, budget and implement water quality management. The intent of the course is to provide a basic understanding of water quality parameters, processes, requirements, and Best Management Practices (BMPs) in order to provide guidance to the transportation community on how to mitigate impacts and protect water quality. This course shares approaches and technologies for the water quality management of highway stormwater runoff, including the effective maintenance, inspection and performance evaluation of BMPs.

Contact Information for State DOT CSS Training Programs

(Please note: This list is provided so that readers may contact state DOTs whose training courses have been listed in the Training Guide in order to obtain more information. This list is not comprehensive of all state DOT CSS contacts, but rather includes only information for states involved in the creation of the Training Guide. For more state-by-state CSS contact information, please see css.org or the FWHA CSS contact list.)

California

Carolyn Dudley, Senior Landscape Architect, 916-654-5505, carolyn_dudley@dot.ca.gov

Caltrans Division of Design, Context Sensitive Solutions Website:
http://www.dot.ca.gov/hq/oppd/context/

Colorado

F. Yates Oppermann, Environmental Planner, 303-757-9497,
francis.oppermann@dot.state.co.us

Florida

Nancy Lee, Environmental Management Office Training Coordinator, 850-414-5320,
nancy.lee@dot.state.fl.us

Florida DOT State Environmental Management Office Website:
http://www.dot.state.fl.us/emo/

Illinois

David Palia, Design Services Coordinator, Division of Highways Training Coordinator, 847-705-4264, David.Palia@illinois.gov

Illinois Department of Transportation CSS Website:
http://www.dot.state.il.us/css/home.html

Kentucky

Jerry Pigman, Manager, Traffic and Safety Section, 859-257-4518,
jpigman@engr.uky.edu

Kentucky Transportation Center CSS Website: http://www.ktc.uky.edu/csd.html

Maine

Kathleen Fuller, Director, Environmental Office, 207-624-3100, Kathy.Fuller@maine.gov

Maryland

Wendy Wolcott, Thinking Beyond the Pavement Program Director, 410-545-0365, wwolcott@sha.state.md.us

Maryland State Highway Administration Context Sensitive Design/Thinking Beyond the Pavement Website: http://www.sha.state.md.us/events/oce/thinkingbeyondpavement/thinking.asp

Massachusetts

George Batchelor, Supervisor of Landscape Design, 617-973-7857, george.batchelor@state.ma.us

Michigan

Lynn Lynwood, Landscape Architect, Roadside Development Section, 517-373-0026, lynwoodl@michigan.gov

Michigan DOT CSS Website: http://www.michigan.gov/mdot/0,1607,7-151-9621_41446---,00.html

Minnesota

Scott Bradley, Landscape Architecture Chief (MNDOT), 612-625-8373, Scott.Bradley@dot.state.mn.us

Jim Grothaus, Program Director (MN Center for Transportation Studies), 651-366-4612, jgrothaus@cts.umn.edu

University of Minnesota Center for Transportation Studies: Context Sensitive Design: The Road Best Traveled Website: http://www.cts.umn.edu/Education/ContextSensitive/

New Hampshire

Craig Green, Administrator, Bureau of Highway Design, 603-271-2784, cgreen@dot.state.nh.us

New Jersey

Elkins Green, Director of Environmental Resources and CSD, 609-530-8075, Elkins.Green@dot.state.nj.us

New Jersey Department of Transportation Context Sensitive Design Website: http://www.state.nj.us/transportation/eng/CSD/

New Jersey FIT: Future in Transportation Website: http://www.state.nj.us/transportation/works/njfit/

New York

Nancy Alexander, Senior Landscape Architect, Design Quality Assurance Bureau, 518-457-8316, nalexander@dot.state.ny.us

New York State Department of Transportation Context Sensitive Solutions Website: https://www.nysdot.gov/portal/page/portal/divisions/engineering/design/dqab/css

Pennsylvania

Dan Stewart, Project Development Engineer, 717-787-0456, danistewar@state.pa.us

Pennsylvania Department of Transportation Context Sensitive Solutions Website: http://65.207.30.22/css/www/

Tennessee

Julie Lamb, Special Assistant for Environment and Planning, 615-741-8899, Julie.Lamb@state.tn.us

Tennessee Department of Transportation Context Sensitive Solutions Website: http://www.tdot.state.tn.us/contextsensitive/

Utah

Angelo Papastamos, CSS Director, 801-965-456, apapastamos@utah.gov

Utah Department of Transportation Context Sensitive Solutions Website:
http://www.udot.utah.gov/main/f?p=100:pg:5368198241354684085:::V,T:,144

Virginia

Emmett R. Heltzel, Assistant State Location and Design Engineer, 804-786-2949,
Emmett.Heltzel@VirginiaDOT.org

Washington

Paula Reeves, Community Design Assistance Program Manager, 360-705-7258,
reevesp@wsdot.wa.gov

Washington State Department of Transportation Context Sensitive Solutions Website:
http://www.wsdot.wa.gov/TA/Operations/LocalPlanning/contextsensitivesolutions.html

FHWA Resource Center

K. Lynn Berry, Community Impact Specialist, 404-895-6212, klynn.berry@dot.gov

Keith Harrison, Safety Design Engineer, 415-744-2657, Keith.Harrison@dot.gov

Mark Doctor, Safety and Geometric Design Engineer, 404-562-3732,
Mark.Doctor@dot.gov